# Medium-Term Review: 1987-1992

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# Table of Contents

# List of Tables and Figures

# SUMMARY

## MAIN FEATURES

The outlook for the Irish economy presented in this *Review* is for a return to a GNP growth rate of around 3.5 per cent by the early 1990s. The public finances will have been stabilised with a borrowing requirement of about 5.5 per cent of GNP by 1992 and the debt/GNP ratio in decline from 1989 onwards. The balance of payments will be increasingly in surplus. However, there will be no substantial reduction in the rate of unemployment over the forecast period. If realised, this would represent a major turnaround from the dismal experience of the 1980s.

The achievement of this performance depends critically on international and domestic factors. At the international level, it is assumed that there will be no world recession. Domestically, it is assumed that the 1988 expenditure cuts will be fully implemented; that there will be no volume increase in public expenditure thereafter; that no overall real tax reductions are conceded; that the public sector pay deal will be rigidly adhered to; and that a measure of pay restraint will prevail in the private sector.

## SECTORAL DETAILS

The industrial sector initiates the resumption of growth with output growth of over 5 percent for the period 1989-92, accompanied by a recovery of investment and a considerably more modest recovery of employment. An important factor in this growth will be the effect of improved competitiveness, reflected in higher profits.

Growth in marketed services will suffer badly as an indirect result of the public expenditure cuts in 1988. However, recovery from the rate of just under 2 percent in 1988 will occur in 1989, and will average around 3.75 percent out to 1992. Investment growth will be boosted as a result of individual large-scale projects as well as by the general recovery. The magnitude of the employment growth is more uncertain. We project aggregate employment to rise by 3,000 in 1988 increasing to over 4,000 per annum subsequently.

The agricultural sector, while showing a small fall in aggregate output, will have rising *per capita* incomes due to the secular decline in numbers in farming.

In the public sector the proposed cuts in expenditure and numbers employed dominate the picture for 1988, with carryover into 1989. From then out to 1992, we assume that services and employment will be maintained at the 1989 level. The evolution of wage costs in the public sector will be governed by the terms of the recent pay agreement out to 1990. Beyond that, we assume that public sector wage costs will move in line with those in the private sector.

The return to a 3.5 per cent growth rate of the economy in the 1990s continues the improvement in the public finances which we see occurring as a result of the 1988 expenditure cuts. The growth leads to revenue buoyancy in the 1990s while also raising the value of GNP. The simultaneous effect of these two changes is to bring about a significant reduction in the public authorities' borrowing requirement (from a level of 14.4 percent of GNP in 1986 to 5.6 percent of GNP in 1992). Borrowing for current purposes will fall from 9.1 percent of GNP in 1986 to just under 3 percent by 1992, while the total debt/GNP ratio will stabilise by 1989 and begin to fall in 1990. By 1992 it will be below the current 1987 level and, in subsequent years, the decline in the ratio would be even more rapid if these trends were to continue.

The balance of trade moved into surplus for the first time in 1985. This trend continued in 1986-87, and is expected to accelerate out to 1992, where it is projected to reach over 12 percent of GNP. However, profit repatriation outflows will also run at a high level if growth continues to depend on multinational companies based in Ireland to the extent that it has in the recent past. Other factor flows will improve with gradually declining foreign debt interest payments. The combination of these elements will result in a current account surplus rising to nearly 3.5 per cent of GNP by 1992. While our benchmark projection shows the public finances coming under control by the early 1990s and a growth rate closer to the experience of the 1960s and 1970s, the economy will still be faced with a very serious unemployment and emigration problem. The rate of unemployment rises sharply in 1988 as a result of the public sector cuts, to 19.5 percent of the labour force. This rise could be greater to the extent that numbers emigrating are lower than the 35,000 assumed for 1988. With the assumed cessation of public employment cuts by 1989, and with gradually increasing employment in industry and marketed services, both the unemployment rate and numbers emigrating begin to fall. However, by 1992, the rate of unemployment is still only slightly lower than it is in 1987.

## ASSUMPTIONS

Our projection is crucially dependent on detailed assumptions regarding the external world economy. Real world industrial output is projected to increase on

average by just under 2.5 per cent per annum and world prices by an average rate of approximately 3 per cent per annum over the medium-term. Exchange rates are assumed to remain unchanged from their current values. Interest rates, while stable in nominal terms, will show some fall in real terms. However, world real interest rates in 1992· will still remain high by the standards of the 1950 -1980 period.

We have incorporated in our projection the effects of the government policy decisions announced in the *Estimates* volume and the *Programme for National Recovery — Pay Agreement for the Public Service*. Our projection has thus been prepared assuming that the public sector expenditure cuts over the period 1988-89 will be fully implemented in the form in which they were announced and that expenditure will be held constant in real terms in subsequent years. In relation to taxation we assume simple indexation from 1988 onwards. Domestic interest rates are assumed to fall further in both real and nominal terms over the projection period.

Finally, the methodology of this *Review* is based on the application of a formal model of the Irish economy and seeks to examine and project possible developments within an analytical framework.

## THE REASONS FOR RECOVERY

The return to a 3.5 per cent growth rate and the gradual restoration of stability to the public finances forecast from 1989 onwards are due to five main factors.
(i) the modest but sustained growth assumed for the world economy
(ii) the effects expected to flow from the improved competitive position of the Irish economy over the period 1986-9.
(iii) the assumed absence of any further cuts in public expenditure after 1989.
(iv) the benefits flowing from the 1988 fiscal adjustment and continued tight fiscal stance to 1992 which results in falling debt interest payments over the five-year period.
(v) a very high personal savings rate and related growth in the balance of payments surplus.

## UNCERTAINTIES AND RISKS

The benchmark projection is a 'best guess' of the outcome but there is an obvious risk of some of the elements going wrong:
(i) the assumption for world growth is quite modest by past standards but the outturn could be even lower, with serious consequences. For example, a zero world growth assumption for 1988 and 1989 would reduce GNP by 5 per cent in 1992 relative to the benchmark projection, increase unemployment by over 23,000 and cause a deterioration in the borrowing requirement of 4 per cent of GNP.
(ii) a rise in world real interest rates in the medium-term.
(ii) a fall in the world rate of inflation.
(iv) although the proportion of industrial profits repatriated is projected as continuing to rise, if

structural developments increase the rate of repatriation even above our assumptions, then growth and the public finances would suffer.
(v) major variations from exchange rate stability might have damaging effects, even within the context of steady world growth (e.g. reduced competitiveness, specifically with the UK, and the allied interest rate dangers for increased debt servicing).
(vi) the public sector expenditure cuts may not be implemented in full and it may not prove politically possible to hold the level of future real expenditures unchanged.

## A POLICY AGENDA FOR THE FUTURE

In the short-run the policy implications of our benchmark projection are clear and unambiguous: the public sector expenditure and employment targets must be achieved if stability is to be restored to the public finances. Depending on the outturn for 1988, the crucial issue will be whether enough progress has been made to afford indexation of expenditures in 1989 (which would require tight control of expenditure and, indeed, some cuts in existing programmes) or whether further cuts on a major scale are needed. In the longer term we assume fiscal indexation and the indications are that any more expansionary policy would be likely to cancel the gains made in the cuts of 1988.

Experience from the first half of this decade indicates that it is wiser to plan the reform of the public finances assuming that the performance of the economy will be less satisfactory than predicted. While the time-path of adjustment in the public finances which we see for the medium-term assumes a neutral fiscal policy after 1988, it would be prudent to recognise that further major budgetary action may still be necessary in 1989. A decision on this matter will have to be made in the light of much more detailed short-term assessments of the 1988 and 1989 outlook, as they become available over the coming months.

A feature of our medium-term projection was the future behaviour of profit repatriation by multinational industries producing in Ireland. It is important to state clearly that these outflows are a normal feature of such foreign direct investment. Such firms tend to be fairly capital intensive, source most of their inputs abroad, have relatively weak downstream links with the rest of the economy and repatriate the major part of their profits. The challenge for industrial policy in the coming years is to build on our existing industrial strengths and attempt to develop firms which will retain a greater portion of added-value within the economy, and to do this within a reduced budget.

Another feature of our projection was the increasing balance of payments surplus and the continued high rate of private capital outflows. The policy challenge here lies in designing ways of encouraging domestic fixed capital formation. This is not an area where fiscal macro management is appropriate. Rather, structural micro measures are needed to make it attractive for domestic firms to set up and develop within Ireland. However, given the constraints on the public finances,

no net addition to grants and subsidies is desirable in the immediate future.

If the actual outturn in the medium-term proves to be close to that of the benchmark forecast, it will be necessary to consider what policies can be deployed to deal with the continuing high rate of unemployment and the related problem of the distribution of income. We must examine how domestic costs can be contained in order to achieve a reduction in unemployment. The pay guidelines laid down for the private sector in the recent National Programme address this issue, but it remains to be seen to what extent these guidelines are effective in containing wage costs. However, since industrial employment is projected to be lower in 1992 than in 1984, it seems that we must *either* accept higher unemployment, increased maldistribution of income and wealth, and continuing high emigration *or* we must find other sources of employment to complement our present forms of industry.

Finally, as part of the programme for adjustment in the public finances and as a contribution towards rectifying the unfavourable movement in the distribution of income in the medium-term, it is desirable that the tax system should be reformed to extend the tax base. The changing pattern of growth envisaged for the Irish economy in the medium-term makes such a change especially desirable.

# SECTION 1

## INTRODUCTION

### 1.1 : WHY A MEDIUM-TERM REVIEW?

The role of the *Medium-Term Review* is complementary to the Institute's other forecasting publication, the *Quarterly Economic Commentary*. The time horizon of the latter is generally some twelve to eighteen months into the future. Because of this relatively short time horizon, the *Commentary* concentrates primarily on the demand side of the economy (exports, private and public consumption, investment, stock changes, imports and factor flows) and the income generated by this expenditure. The productive capacity of the economy is taken essentially as fixed, or at most changing moderately in response to short-term factors. In terms of public policy, the *Commentary* concentrates on immediate issues, such as fiscal strategy in the coming year, and any discussion of long-term problems tends to be strictly qualitative.

The time horizon of this *Medium-Term Review* is set at five years. Given the inevitable instability of the external economic environment, well exemplified in the past five years with its exchange rate gyrations, price fluctuations, trade disequilibria and so on, there may be a temptation to believe that little is to be gained from trying to look five years into the future. Nevertheless, decisions have to be taken now, both with regard to corporate investment and to public policy, which will shape the future of the Irish economy well into the 1990s. Some view of trends has to be taken in reaching these decisions, and it is clearly useful to have available formalised and consistent projections, however conditional these may be.

The key difference between a one-year and a five-year time horizon in forecasting is that in the longer term it is developments on the supply side of the economy which are of prime importance. This renders the short-term, essentially Keynesian, income-expenditure framework of the *Commentary* inappropriate for a five-year forecast. Accordingly, this *Review* concentrates on the determinants of the productive capacity of the economy, such as investment, the capital stock, capacity utilisation and employment.

### 1.2 : THE 1986 MEDIUM-TERM OUTLOOK

The first *Medium-Term Outlook* published by The Economic and Social Research Institute was issued in February 1986, and covered the period from 1986 to 1990. Much of the analysis remains highly pertinent, and it is possible that by 1990 the economy might be quite close to many of the trend predictions made.

However, there can be no escaping the fact that, in the first two years of the period covered, the performance of the Irish economy has fallen well below the central benchmark projection. Thus real GNP at factor cost was projected to increase by 2.5 per cent in 1986 and 2.75 per cent in 1987. Latest estimates suggest that in fact there was a fall of about 1.5 per cent in 1986 and there will be a rise of only 1.75 per cent in 1987. The Public Sector Borrowing Requirement was projected to fall slightly from £2,444 million in 1985 to £2,375 million in 1986. Instead, it rose to £2,506 million, although the subsequent cut-back in 1987 will be greater than projected.

There are three main reasons for this disappointing performance. In the first place the evolution of the world economy has proved considerably less favourable than was assumed on the basis of the then available projections of the major international agencies. Chronic trade imbalances, particularly between the US and Japan, have persisted with little or no improvement, there has been less progress than expected towards convergence in fiscal policies in the major countries, and the volatility of exchange rates has been much greater than anticipated. Largely as a consequence of these factors, world output and trade have grown about 1 per cent per year more slowly than predicted, with a resultant shortfall in the volume of productive investment, while real international interest rates have declined only slightly. Of particular relevance to Ireland, the rapid and unforeseen depreciation of sterling in the course of 1986 inhibited exports to the UK and forced up domestic interest rates to far above the predicted levels.

The second major factor, which tends frequently to be overlooked, was the recurrence of exceptionally bad weather in 1986. Through its effects on agriculture, and to a lesser extent on the balance of tourism expenditure, the abnormal weather reduced the level of GNP in 1986 by almost 1 per cent. This in turn had adverse consequences for the public finances.

The failure of fiscal policy to match expectations in 1986 comprises the third major reason why economic performance deviated from the projection. Special factors apart, the major causes of the slippage in the public finances in 1986 were the unexpected fall in the rate of inflation and an inability to prevent special pay awards in the public service. While a lower than expected rate of price inflation tends to depress revenue receipts from indirect taxes, it does not lead to any short-run saving in public expenditure. Indeed, the use of cash limits as a control mechanism in such a period

can actually increase the volume of spending, unless immediate action is taken to reduce the limits. No such action was taken in 1986.

The net effect of these external shocks, climatic conditions and policy weaknesses is that the economy in 1986 moved further from equilibrium, rather than entering the corrective path projected in the 1986 *Medium-Term Outlook*. For a fuller discussion of why 1986 did not live up to the almost universally optimistic forecasts made early in that year, see the *Quarterly Economic Commentary*, October 1986. Developments in 1987, particularly the imposition of a much stricter fiscal policy, and a boom in industrial exports, have checked this incipient slide, so that in several respects the economy at the end of 1987 resembles that at the end of 1985.

## 1.3 : THE PRESENT REVIEW

Although it uses a macroeconomic framework similar to the previous *Outlook*, the methodology of this *Review* is not one of attempting simply to update the previous figures taking account of the delay in economic progress. Rather, it seeks to examine and project possible developments within a formalised analytical framework, and to explore in some detail the likely effects of alternative policy options.

The principal feature of this new approach is that it is based on the application of a formal comprehensive medium-term model of the Irish economy, which was not available when the previous *Outlook* was written. This medium-term model has been developed in the ESRI and it forms part of the EEC-wide system of linked macroeconomic models — HERMES. Before proceeding to outline the structure of this *Review*, it may be useful to summarise some of the general characteristics of econometric models and their role in forecasting and policy evaluation.

## 1.4 : THE ROLE OF ECONOMETRIC MODELS

Essentially, macroeconomic models are an attempt to represent the pattern of actual economic relationships in a series of interlinked econometric equations. The structure of the model is determined in the first place by the view of economic theory adopted by the model builder. The ESRI model used in this *Review* is based on a small open economy approach, in which Ireland is viewed as taking its internationally traded prices from the rest of the world, and in which the pace of aggregate domestic growth depends primarily on the rate of industrial growth. This in turn depends in large part on the growth of world output, which creates the demand for worldwide investment, and in part on the relative profitability of Irish industry, which determines the share of world industrial investment and employment which locates in Ireland. The technological relationship between output, employment and investment (i.e., the production function), and the nature of the derived demands for labour and capital are assumed to follow fairly conventional neo-classical rules (e.g., employment and investment are sensitive to the relative price of labour and capital).

In making such a model operational, its builders are constrained by the lack of availability of usable data series to represent the economic variables specified in the theoretical model. Even where series are eventually available, there may be a lag of several years before reliable figures appear. Thus it is frequently necessary to modify the model to take account of structural or temporal data gaps. The result is a compromise between what is theoretically desirable and what is practicable.

Values are placed on the coefficients in the equations by observing relationships over a long period, in this case from 1960 to 1984. The stability of the resulting estimates are examined, particularly their sensitivity to the more recent data. This process results in further modifications, as certain formulations of series or relationships turn out to work better than alternatives which seemed equally valid on theoretical grounds.

This brief summary of the nature of econometric model building is necessary to an understanding of the strengths and limitations of a model-based approach to economic forecasting.

One strength lies in the fact that the model is the expression of an explicit economic framework, and thus should be free of the conceptual inconsistencies which can creep into an *ad hoc* analysis. A more vital strength results from the full articulation of a comprehensive model. Both the direct and indirect effects of altering an independent variable are calculated simultaneously. This is particularly useful in policy evaluation, where the full consequences of, say, a change in income tax rates can be effectively simulated. Thus not only the immediate change in revenue, but also price and wage effects, alterations in expected levels of employment and imports, and the indirect impact on government revenue and expenditure can be calculated together with a reasonable degree of confidence.

The limitations of models in forecasting must also be acknowledged if optimum use is to be made of the approach. Obviously, any model, however complex, represents a simplification of the real world. Some of the factors omitted, either because they are inherently unpredictable or because their influence has not been observable in the past could in practice have a major impact on economic developments in the period being forecast. Moreover, in constructing the model and in the process of simplification parts of the theory adopted may prove to be controversial and may, in the future, be shown to rest on an inappropriate analysis of how the economy really operates.

Unavoidably, some of the data series used to represent economic factors are only rough approximations to what the modeller would actually wish to have measured. For example, no official time series exists on the degree of capacity utilisation, either in industry or the economy as a whole. In consequence, an artificial series needs to be constructed, comparing actual output with an estimated potential output trend, which is a less than satisfactory method of calculating the value of a crucial economic variable. Inevitably,

also, many of the series used contain actual errors in measurement, as is evidenced by the frequent revisions made to official economic statistics, sometimes many years after the initial estimates have been made.

Perhaps the most serious limitation, which is less obvious than those already mentioned, is the underlying rationale of econometric analysis that observed relationships remain constant over time, or, at most, change at a steady rate. If behaviour changes between the period of observation and the period to be forecast because of new institutions, altered tastes, different technology or any other reason exogenous to the model, then projections made purely on the basis of past observations can give a misleading picture of the future.

These various limitations do not prevent comprehensive econometric models from being useful tools in forecasting, particularly in the medium term. Indeed, less formal methods and approaches are bedevilled by identical problems. However, they do mean that such models should not be applied mechanically. Judgement needs to be used in deciding to override the model in places where there are reasons to suppose that relationships might be changing, where there is serious doubt about the accuracy of the data input, or where some event extraneous to the model can be foreseen. The number of such adjustments necessary in short-term analysis, where temporary disturbances often dominate underlying trends, tends to restrict the usefulness of such models.

In constructing medium-term projections, as in this *Review*, the benefits of consistency are far greater than in short-term forecasting. Nevertheless, some adjustments to the 'pure' model results do need to be made, so that the projections published reflect the authors' judgement as well as the analytical knowledge incorporated in the model. At the same time it is important to treat the projections with some caution since they merely show what the overall consequences would be if certain specified assumptions hold good and if past relationships continue to apply. Although every effort has been made to adopt reasonable assumptions for the benchmark projections, this conditional nature of the projection should be borne in mind.

Fortunately the great advantage of using a comprehensive model for medium-term forecasting is that it does enable the approximate consequences of altering the assumptions or amending the policy variables to be calculated readily while maintaining an acceptable degree of consistency. Thus a greater range of possibilities or options can be explored than is possible using an *ad hoc* approach.

## 1.5 : THE STRUCTURE OF THIS REVIEW

The pattern of this *Review* is as follows. Section 2 sets out the baseline assumptions underlying the benchmark projection. With regard to the international economic environment, the latest forecasts of the major international agencies are taken as providing the best available analysis of likely movements in world output, costs and prices. The domestic policy assumptions are made within the context of the government's stated policies with regard to the public finances and the national debt, and take account of the *Programme for National Recovery* and the 1988 *Estimates*. For 1987 and 1988 both the assumptions and the projected out-turns are broadly aligned with those published in the October 1987 *Quarterly Economic Commentary*.

Section 3 presents the benchmark projection for the period 1987-1992 on the basis of these assumptions. Working through from output to incomes and expenditure the major implications for employment, prices, and the public finances are discussed. As already outlined this benchmark projection is primarily model-based but has in parts been adjusted according to the authors' judgement.

Section 4 explores the effects of altering the assumptions concerning the external environment, of taking a different view on some of the parametric uncertainties, and of adopting alternative domestic macroeconomic policies. Although the model is capable of examining a wide range of possible options, for obvious presentational reasons, only a small number of the more important options can be discussed here.

Section 5 reviews the salient findings of the previous sections, and discusses their policy implications in a medium- to long-term context, drawing also on the special articles on the food industry and on industrial profit expatriation which are included in this publication.

# SECTION 2

## BASELINE ASSUMPTIONS

In preparing any forecast for the Irish economy the first and most important task is to spell out one's assumptions concerning the external environment for the forecast period. Because of the extreme openness of the Irish economy, developments in the rest of the world generally play a bigger role in determining its pattern of growth than do most internal policy decisions. However, the pattern of growth is obviously also affected by the domestic stance of economic policy so that we must make assumptions concerning the direction of domestic fiscal and monetary policy over the forecast period.

## 2.1: THE WORLD ECONOMIC OUTLOOK 1987-92

### Introduction

A wide range of sources has been used in forecasting future developments in the world economy. Generally the short-term forecasts for 1988 are more readily available and more detailed than those for the full period to 1992. The short-term forecasts for the international economy given in the *OECD Economic Outlook*, the *Quarterly Economic Commentary, October 1987* of the ESRI and the *Quarterly Bulletin* of the Central Bank are used for 1988. The main data sources for the years 1989 to 1992 are the *Medium-Term Projections* of the European Commission (EEC, May 1987), the *World Economic Outlook* of the IMF (IMF, April 1987, updated September 1987), *Economic Outlook 1987-1991* (LBS, 1987), and the *National Institute Economic Review* (NIER, September 1987).

In developing our assumptions concerning the world economy in the medium-term we have concentrated on their internal consistency. In some cases this has necessitated technical assumptions which may be unrealistic if considered in isolation. In particular, because some of the key sources of information base their forecasts on unchanged exchange rates for major currencies, we have found it easier to follow this practice. Otherwise it would be necessary to forecast independently the effects of changes in exchange rates on rates of inflation and growth in each of the major countries which is a task beyond our resources. In any case the effects on Ireland of shifts in the relative value of the major currencies are far from clear. The most relevant exchange rate assumption, that the IR£ will remain broadly unchanged in terms of the ECU, is itself not unrealistic.

The medium-term outlook for the Irish economy is strongly influenced by developments in those countries with which Ireland has close trading links. In making assumptions about world economic developments in trade, prices, exchange rates and interest rates, special attention is paid to the developments in these countries. However, trade is not the only international linkage which is important in determining the growth of the economy. In particular, because of the importance to Ireland of investment by foreign multinational companies, developments in those countries from which such investment originates and trends in countries competing to attract such investment are especially relevant.

As a result, while prospects for the UK economy in the medium- term remain important for Ireland, they are generally of more limited influence than at any time in the past. Developments in the US, German and Japanese economies, on the other hand, are of increasing significance for Ireland. The weights we have used in taking account of forecasts for the future development of the other economies are shown in Figure 2.1 for the period from 1960 to 1987.(We have used the 'double export weights' derived by the European Commission.) For the forecast period we use the latest available set of weights, i.e. those for 1984. The decline in importance of the UK economy over the period 1960-84 can be clearly seen, as can the rise in the significance of Germany.

### Output

The Irish industrial sector is particularly open to influences from the outside world, with a high proportion of new industrial investments over the last thirty years being undertaken by foreign multinational corporations (see O'Malley, 1986). In the short run, a rise in the level of real activity in the 'world' economy imparts a demand stimulus to the Irish economy. Irish firms experience a rise in the demand for their products and increase their output (and level of capacity utilisation) to meet the demand. Consequently, in short-term forecasting, the level of world real activity is crucial in determining likely developments in Irish industrial exports.

The effect of any increase in world demand on output will be strictly limited in the short-term by the extent of available capacity. In this *Review* we take a medium-term view of economic developments out to the year 1992. As a result, we are less concerned with the temporary influence of world demand on demand for Irish exports than on the effects of developments in the outside world on the *supply* side of the Irish industrial sector.

# FIGURE 2.1
## DOUBLE EXPORT WEIGHTS



| | | | |
|---|---|---|---|
| ——— | + | UNITED KINGDOM | |
| — — — | * | UNITED STATES OF AMERICA | |
| – – – – | X | FEDERAL REPUBLIC OF GERMANY | |
| — - — - | 0 | JAPAN | |
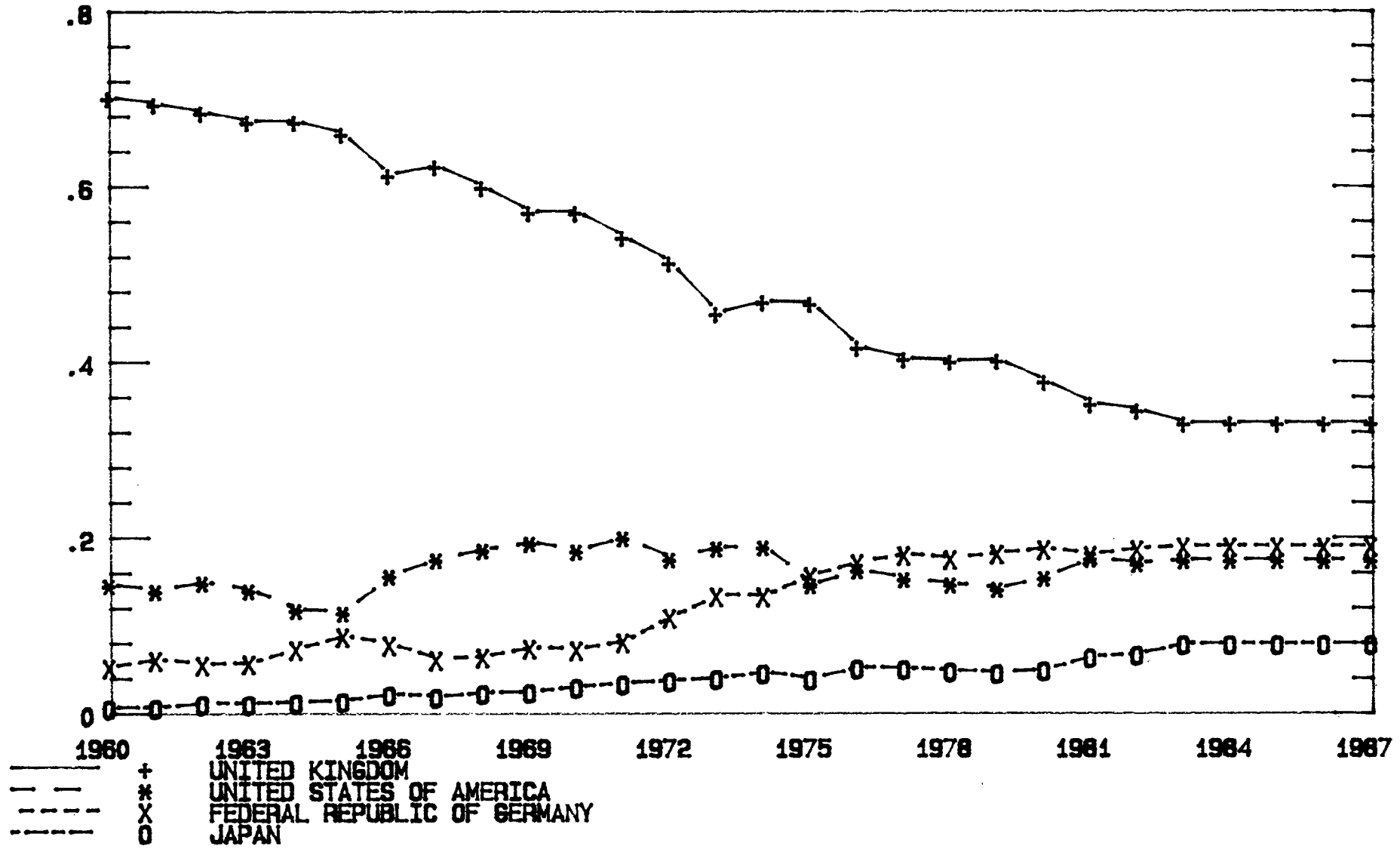
We see the desired or planned long-run level of Irish industrial output as a function of world activity and the relative attractiveness of Ireland as a location for such output. Having decided on the planned output level firms then have to install the necesary plant to produce it. The choice of Ireland as a location for supplying the world economy naturally involves the growth of capacity by Irish firms as well as by multinationals. The desired level of output, determined by these factors, results in new investment to supply the output. It is only when the new capacity comes on stream that actual supply increases. This longer-term supply effect will be crucial in determining the growth of the industrial sector up to 1992 and beyond.

In our model-based analysis, Irish industrial output is driven by a measure of real industrial output in the OECD big-seven. In addition, the level of Irish competitiveness relative to foreign producers, appropriately measured (as discussed below), influences the decision to invest in Ireland. In the case of Irish firms an improvement in competitiveness will improve their profitability and encourage expansion. In the case of foreign firms an improvement in the competitive position' of the Irish economy will encourage larger numbers to locate part of their production capacity here.

Within this framework we need to project trends in the general level of world economic activity. The latest IMF forecast for industrial output in the major world economies in the medium-term suggests an average rate of growth of just under 2.5 per cent a year. This figure is broadly consistent with the most recent EEC prediction for export growth in the major industrial economies of 4 per cent per annum out to 1992. There will obviously be some fluctuations around this trend increase, although it is impossible to predict their timing and magnitude. Thus even if recent events lead to world trade growing by slightly less than 4 per cent in 1988 it may be reasonable to assume that over the period as a whole this growth rate will be realised.

## Prices

The Irish economy is also very open to international price inflation pressures. Given the assumption of fixed exchange rates (see below for further details), the Irish inflation rate largely mirrors that of its main trading partners. There are three crucial classes of external prices for the Irish economy: the price of world industrial output, the prices of energy and non- energy imports, and agricultural prices. A key assumption concerns the world industrial output price which we forecast to grow at the same rate as EEC predictions for export prices in the major industrial economies. This produces a forecast of an average rate of inflation of 3 per cent per annum from 1988 to 1992. Non-energy import prices are assumed to follow the export price forecasts for the twelve EEC countries, showing an average increase of 3 per cent per annum.

While predictions earlier this year suggested that oil prices could rise significantly in the medium-term, recent events suggest that world growth will be slower than previously predicted. This will ease the pressure on

demand and we have, as a result, assumed that oil prices rise in line with the price of industrial goods. This will involve a rise in the dollar price of oil to compensate for the recent substantial devaluation of that currency.

Finally, the prices of agricultural output and exports will be determined by developments in the Common Agricultural Policy, which are highly unpredictable. At the present time, average growth rates for agricultural prices of 2 per cent per annum seem plausible, against a background of continuing quota restrictions and ongoing reform of the CAP. This means that the terms of trade will continue to move against agriculture in the medium-term. As with output, actual price changes from year to year may diverge temporarily from this trend, but over the medium-term these fluctuations can be expected to cancel each other out.

## Competitiveness

Ireland's economic performance over the next five years will depend not only on world demand and world price levels but also on our competitiveness vis-à-vis our trading partners. Thus, we need to project the course of different competitiveness measures - in terms of output prices, hourly earnings, unit labour costs, and profit rates — in these other countries. Output prices have already been discussed. World hourly earnings are forecast to increase in line with per capita wages in the EEC at an average rate of nearly 5 per cent per annum. Table 2.1 shows the latest trends for the major OECD economies together with the Quarterly Economic Commentary forecasts for 1988. World unit labour costs, on the basis of the same sources, are forecast to rise at an average rate of 2 per cent per annum.

**TABLE 2.1: Wage Rates (Hourly Earnings) In Major Economies (percentage change on same period in previous year)**

|  | West Germany | United Kingdom | United States | Ireland |
|---|---|---|---|---|
| 1985 |  |  |  |  |
| Q1 | 3.5 | 8.9 | 4.0 | 8.0 |
| Q2 | 6.0 | 10.0 | 4.0 | 8.9 |
| Q3 | 4.2 | 9.2 | 3.1 | 7.7 |
| Q4 | 5.1 | 8.4 | 3.9 | 7.0 |
| 1986 |  |  |  |  |
| Q1 | 4.2 | 7.9 | 3.1 | 7.7 |
| Q2 | 1.6 | 7.6 | 2.3 | 7.0 |
| Q3 | 4.1 | 7.1 | 2.3 | 7.1 |
| Q4 | 4.0 | 8.0 | 1.5 | 6.8 |
| 1987 |  |  |  |  |
| Q1 | 4.0 | 7.8 | 0.7 | 6.2 |
| Q2 | 4.8 | 7.6 | 1.5 | — |
| Forecast |  |  |  |  |
| 1987 | 3.5 | 7.5 | 3.5 | 5.3 |
| 1988 | 3.5 | 7.5 | 4.0 | 4.8 |

Sources: Quarterly data — OECD Main Economic Indicators. Forecast — ESRI Quarterly Economic Commentary.

In considering the competitiveness of the Irish industrial sector attention is normally concentrated on comparisons of wage costs. However, a wide range of other factors affect competitiveness including the cost of domestically produced inputs, for example electricity, and interest rates. A wider indicator of competitiveness is the profitability of the industrial sector, and this is the competitiveness measure actually used in the model to drive Irish industrial output. For the rest of the world it is taken as the profitability (measured as profit per unit of added-value) of the industrial sectors

in the US, the UK and Germany, the economies which recent research found to be important. Future movements in international profit rates are not normally covered by the major bodies preparing medium-term forecasts for the world economy. As a benchmark, we assume that the international profit rates are fixed at their most recent published values. This is broadly consistent with forecasts for world wage costs and the price of world output.

## Exchange Rates

The extreme volatility of exchange rates in the 1980s is apparent from Figure 2.2. The recent slide in the dollar compared to most other currencies is only one manifestation of this instability. However, in making medium-term projections international bodies, such as the EEC and the OECD, use the conventional technical assumption of unchanged exchange rates. This assumption is not intended to be realistic. However, provided that our interest rate and price assumptions are consistent with the projected time path for exchange rates, the effects of any lack of realism in this approach on the forecasts for the real sector of the world economy will be minimised. Because we require consistent world forecasts as a basis for the model-based projection for the Irish economy, it is necessary to adopt this convention as it is not feasible to prepare our own consistent world forecasts. Consequently, we assume that all rates of exchange against the US$ will remain fixed from the end of 1987. Even if exchange rates show some volatility in the future, it is possible that the path of the effective Irish exchange rate will be close to that assumed in this benchmark projection.

This has important consequences not only for domestic price inflation but also, given the high level of national debt denominated in foreign currencies, for net factor income flows in the medium term. This assumption of fixed exchange rates underlies our assumptions concerning the world rate of inflation and world interest rates over the period 1988 to 1992.

It may well be the case that there will be some further limited devaluation of the dollar and sterling together with a revaluation of the DM against the IR£ in the medium-term. Provided that real interest rates and world rates of inflation adjust to reflect this change the net effect on our forecast for the Irish economy would be limited. However, if there were a further precipitate fall in either the dollar or sterling, or if the EMS were to break up, there would be important implications for the Irish economy in the medium-term and the benchmark projection would have to be adjusted accordingly.

## Interest Rates

In the early 1980s international real interest rates (interest rates less the rate of inflation) rose rapidly to historically very high levels. While nominal interest rates have fallen back from their peak values in the mid-1980s, the fall in the rate of inflation worldwide has meant that real interest rates have remained very high. In the last few weeks changes in monetary policy in key industrial countries have led to limited further falls in nominal interest rates. However, the longer-term implications for real interest rates remain unclear.

For the future we have assumed little change in the nominal interest rates of the major EMS currencies from their current (end November) levels. Given our forecast for inflation, this involves some further reduction in real interest rates in those countries. For the US we have assumed that the budgetary situation will be brought under control and that, as a result, by the end of 1992, dollar interest rates will be slightly lower than current levels. Clearly this assumption concerning the dollar interest rate must be considered very tentative. This approach assumes that with fixed exchange rates, the rates of inflation and real and nominal rates of interest in the major industrial countries will tend to converge in the medium-term. Of necessity, any change in the exchange rate assumption would have consequential effects for interest rates and inflation rates in the countries affected. However, if there is a world recession it may well be accompanied by a general fall in interest rates due to falling demand for funds. In terms of the domestic economy such a fall in interest rates would, to some extent, tend to offset the effect of the fall in world demand.

It is difficult to assess the effectiveness of the action recently taken by the US to deal with its budgetary problems and its implications for world growth. This factor remains a major source of instability in world financial markets and could seriously affect international interest rates in the medium-term. Other major sources of uncertainty are the continuing debt problem of Third world countries and the possible effects of instability in the Middle East.

## 2.2: DOMESTIC POLICY ASSUMPTIONS 1987-92

### Fiscal Policy

We now address the choice of fiscal policy in the benchmark projection to 1992. This projection takes into account the decisions already made by the government for next year, incorporated in the *Book of Estimates* and the *Programme for National Recovery*. In addition, an allowance has been made for the indexation of social welfare benefits from the middle of 1988. For 1989 we take account of the carryover effects from 1988 of the policy decisions already announced for 1988. These affect both public service pay and employment in 1989 and public service pay rates in 1990. For all other aspects of fiscal policy (e.g., taxation) indexation is assumed from 1989 onwards. Public service employment is held constant at the 1989 level to the end of 1992 and public sector pay rates after 1990 are linked to movements in industrial wage rates.

In what follows we first give a brief discussion of the implications of the *Book of Estimates* and the *Programme for National Recovery* for the government accounts in 1988. Following this we describe the underlying methodology adopted in relation to fiscal policy indexation for the four years beyond 1988 and provide a summary description of the indexation rules used in the projection.

In launching the *Estimates* the Government made it clear that provision was made for a cut of 8,000 in the numbers employed in the public service outside of local

# FIGURE 2.2
## EXCHANGE RATES: INDEX OF IRISH POUNDS PER UNIT OF FOREIGN CURRENCY



Legend:
- + US DOLLAR
- x UK POUND
- ◊ GERMAN MARK
- □ JAPANESE YEN
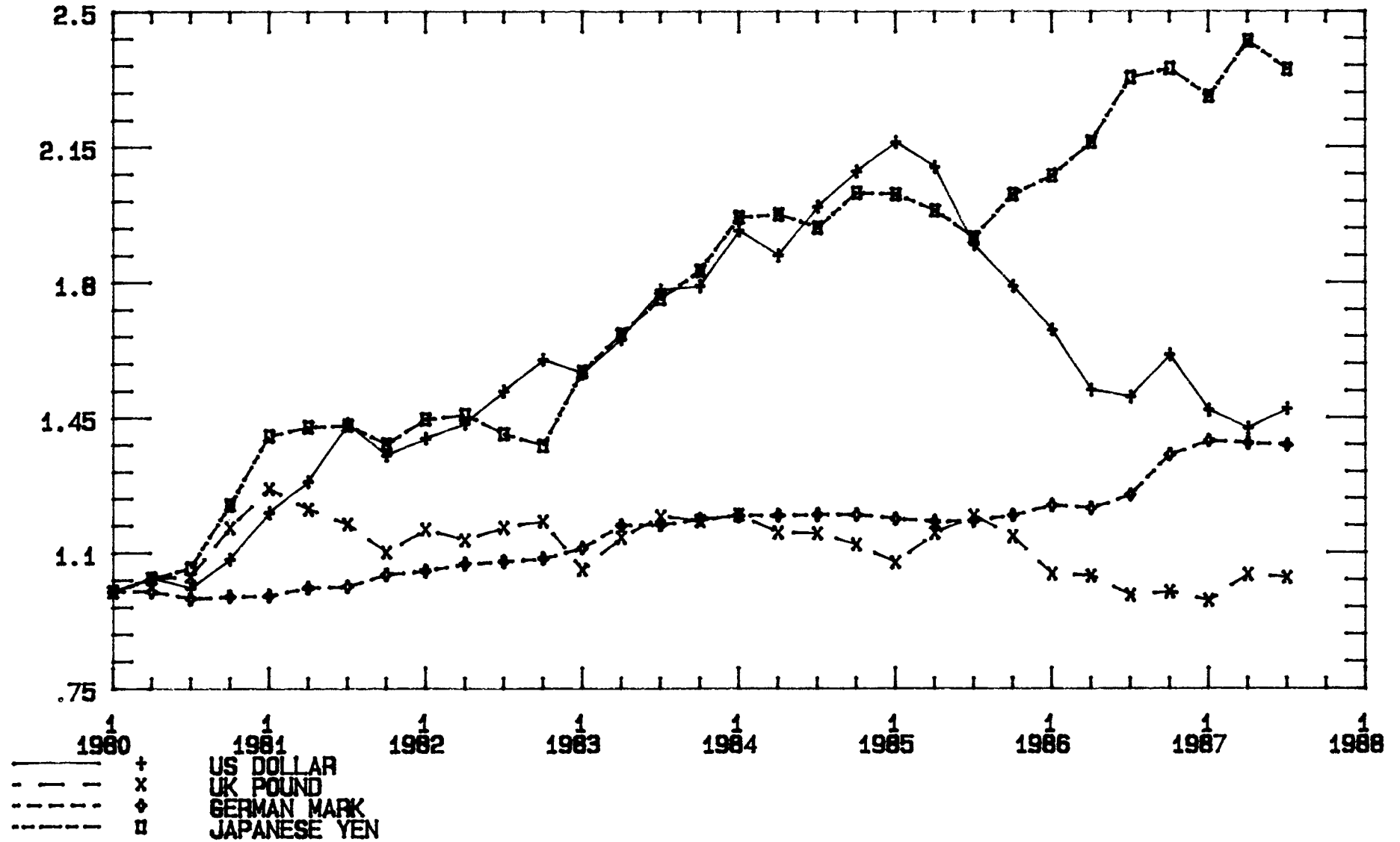
authorities. For local authorities we have assumed that there will be a cut in numbers of 2,000, making a cut in total public service employment of 10,000 on average in 1988 compared to 1987. In addition, there are the carryover effects of the cuts in employment made in 1987 which will affect public service employment in 1988. We have assumed that there will be no slippage from these figures. We would expect that because many of the cuts will take some time to come into effect there will be a significant carryover into 1989 resulting from the decisions announced in the *Estimates*. This will involve a further fall in public service employment in that year of over 3,000 compared to the 1988 level. The resulting trend in public service numbers is that there will be a fall from the 1987 figure of 200,000 to 190,000 in 1988 and 187,000 in 1989 and thereafter.

In considering the pay bill for the public sector it is very important to take account of the fact that, due to the traditional national accounting conventions, it also includes superannuation payments. As the costs of superannuation and redundancy will rise very considerably in 1988 this development will have an important effect on the rise in the pay bill (including superannuation costs) per person currently employed in the public sector. It is this figure which is normally, but inappropriately, quoted as the indicator of pay rates in the public sector. The *Programme for National Recovery* involves an increase of about 2.5 per cent on average in public service pay rates on the 1st of January in each of the three years 1988, 1989 and 1990. To this increase must be added the carryover into 1988 from the previous pay agreement; the effects of special pay increases already agreed and due for payment on the 1st of December 1987 and 1st July 1988; an estimate for the effects of new special increases, still to be agreed, 40 per cent of which may be paid under the *Government Programme* from 1st July 1989; an allowance for an increase in pay due to increments; an allowance for an increase in the number of public service pensioners due to early retirements; the effects of changing numbers of pay days in the years 1987, 1988, and 1989. Finally, we have assumed that the lump sum costs of the early retirements will amount to £40 million, somewhat less than that implied by government statements. As with the provision for the increased number of pensioners, these payments are treated in this *Review* as part of the public service wage bill. The resulting estimates for the increase in public service pay costs per person employed in the years 1988 to 1990 are shown in Table 2.2. For 1991 and 1992 these costs are assumed to rise in line with pay rates elsewhere in the industrial sector.

A final special factor which will affect public authorities' consumption (which includes most of the pay bill) is our assumption that local authorities will cover part of the cutback in their grants from the exchequer by raising charges by £40 million. This serves to reduce the cost to the exchequer of public service consumption expenditure.

In the case of public service expenditure on subsidies we have taken the figures implied in the *Estimates*. For

TABLE 2.2: Public Service Pay Bill per Person Employed 1988-90

|                                 | 1988 | 1989 | 1990 |
|---------------------------------|------|------|------|
|                                 | %    | %    | %    |
| Carryover From Old Agreement    | 0.7  | 0.0  | 0.0  |
| New Agreement                   | 2.5  | 2.5  | 2.5  |
| Special Increases               | 1.4  | 1.2  | 0.7  |
| Increments                      | 1.0  | 1.0  | 1.0  |
| Number of Pay Days              | -1.1 | 0.6  | 0.0  |
| Superannuation — Lump Sum       | 1.3  | -1.3 | 0.0  |
| Superannuation — Pensions       | 0.5  | 0.5  | 0.0  |
| Total                           | 6.3  | 4.5  | 4.2  |

transfers we have allowed for their indexation from 1st July 1988 as provided for in the *National Programme*. This increase is not provided for in the estimates. (Changes in the numbers unemployed also affect unemployment transfers in the model.) The *Public Capital Programme* figures for 1988 are used to project public authorities' capital expenditure in 1988. (For 1989 we have assumed that no provision will be needed for house improvement grants.) The national accounts figure for public authorities' spending in 1987 is increased by £150 million due to loans to the EEC intervention agency. This arises as a result of the EEC delaying payment for intervention costs for the last quarter of 1987. For 1988 and subsequent years we have assumed that the EEC pays four quarters costs of intervention but does not accelerate payment to repay the 1987 loan.

For taxation we have assumed indexation of the tax system from the end of 1987 to the end of 1992. This means that rates of specific indirect taxes (excise taxes) rise in line with prices while VAT *rates* remain unchanged. In the case of direct taxes it involves the indexation of bands and allowances to wage rates to keep the average rate of income tax unchanged. This assumption is not intended as a forecast of the 1988 budget but it is consistent with the *Programme for National Recovery*.

Government trading and investment income was boosted in 1987 due to a special payment to the Exchequer by Bord Telecom of £60 million. This payment will not be made in 1988. The resulting fall in trading and investment income is partially offset in 1988 by an assumed exceptional payment by the Central Bank of £40 million to cover the cost of the public sector redundancy deal. The problems with Dublin Gas also affect these receipts. For the 1990s this item is indexed.

For public expenditure after 1988 we have also generally assumed indexation. The exceptions, based on the policy decisions announced in the *Estimates* and the *Programme for National Recovery*, have been spelt out above. This means no change in public sector employment and, in the case of other items of public expenditure, payments rise roughly in line with prices. (In the case of unemployment transfers, certain subsidies, and grants, the rate of payment is indexed to prices while the cost of these payments also varies with

changes in the relevant base, e.g., the numbers unemployed.)

The assumption of indexation is not intended to have any normative implications. It conforms to standard definitions of real fiscal neutrality and is a convenient rule of thumb used by economists. It implies that the activity of the public sector after 1989 will have no net effect on the rest of the economy, i.e., it neither stimulates nor deflates the economy. In using it for the years 1989-92 (subject to the caveats specified above) it allows us to specify a benchmark projection against which the different policy variants discussed in Section 4 can be measured.

## Interest Rates

In projecting interest rates into the medium term, the underlying assumption is that the gap between Irish and international interest rates will gradually close. By 1992 domestic long-term rates on government debt will be down to around 7.5 per cent, still somewhat above DM rates. This is in line with the EEC projection for long-term rates in the US and the EEC in 1992. The existing differentials between the various domestic interest rates, namely, deposit rates, the prime lending rate and bond rates, are maintained in the projections.

## Labour Force

The potential rate of natural increase in the labour force continues high. In recent years there has been a substantial rise in emigration and a significant fall in labour force participation in the relevant age groups which has resulted in a small fall in the actual labour force. We anticipate that the fall in participation rates will continue in the medium-term, especially with the proposals for early retirement in the public sector. While data problems have made precise quantification of the effects of developments in the domestic labour market on emigration rather difficult, it is clear that they are important in the medium-term. As a result, in the projections described in Section 3, we have assumed that the level of emigration will move roughly in line with changes in domestic unemployment.

## 2.3: SUMMARY

In our benchmark real world industrial output is projected to increase on average by just under 2.5 per cent per annum and world prices by an average rate of approximately 3 per cent per annum over the medium term. Exchange rates are assumed to remain unchanged. Interest rates, while stable in nominal terms, will show some fall in real terms. However, world real interest rates in 1992 will still remain high by the standards of the 1950-1980 period. Other inflows to the economy (e.g., from the EEC) are assumed to maintain their present real value.

While the world growth assumptions underlying the benchmark are modest by historical standards, they ignore threats to the world economy such as those posed by the rise of protectionism, by the US budgetary problem, by the continuing possibility of default on developing countries debt and and by the instability in the oil-producing regions of the Middle-East. In Section 4 we separately examine the consequences for Ireland of a substantial reduction in world growth and of some reduction in the world rate of inflation.

We have incorporated in our projection the effects of the government policy decisions announced in the *Estimates* volume and the *Programme for National Recovery — Pay Agreements for the Public Service*. The latter document determines the rate of growth of public service wages for the period 1988-1990, which are subsequently assumed to rise in line with wage rates in the industrial sector. (Wage rates outside the public sector are determined by the model and are not directly affected by the government pay policy.) The recent *Estimates* publication contains explicit decisions in relation to expenditure which depart from indexation. In our benchmark projection we have implemented these changes in detail in so far as they can be approximated in national accounting form. This projection has been prepared on the basis that the public sector expenditure cuts over the period 1988-89 will be fully implemented in the form in which they were announced. In relation to taxation we cannot prophesy the precise contents of the forthcoming budget of January 1988 but we have incorporated an assumption of indexation of the tax system.

# SECTION 3

## BENCHMARK PROJECTION 1987 — 1992

The benchmark projection for the years 1988 to 1992 has been prepared with the assistance of the ESRI's Medium-term Model of the Irish economy. The projection for 1988, subject to some minor changes needed to fit into the model framework, is taken from the October ESRI *Quarterly Economic Commentary.* The projection takes the assumptions, set out in Section 2 and, with the help of the model, traces their likely impact on the domestic economy. While short-term forecasts focus on the expenditure side of the national accounts, the starting point for any medium-term projection of the economy must be the supply side. The major constraint on growth in the medium-term is the volume of output which can be successfully and profitably supplied by the productive sector.

This section begins by examining the prospects for each of the productive sectors of the economy in turn: industry and market services, the public sector and agriculture. The growth of output and the competitiveness of the domestic productive sector will, in turn, determine the level of employment in the economy. We then examine the likely development of wage rates and prices in the economy. Once we have determined wage rates, prices and employment, we are in a position to project the development of domestic incomes. The volume of consumption and the expected development of the expenditure side of the national accounts are then described together with the prospects for the balance of payments. Given the assumptions concerning labour force participation, spelt out in Section 2, the rate of unemployment and the level of emigration are endogenously determined. Finally we consider the prospects for the exchequer borrowing requirement and the flow of funds in the economy.

## 3.1: THE SUPPLY SIDE OF THE ECONOMY

### The Industrial Sector

In the model the industrial sector covers transportable goods industries (primarily manufacturing industry), the building industry and utilities (e.g., the ESB). Of these, much the most important is transportable goods industries, the building industry share of total industrial output having fallen significantly in the 1980s.

Over the last thirty years the key to sustainable economic growth has been seen to lie in the development of the industrial sector, especially transportable goods industries. The growth in output has come disproportionately from foreign-owned firms and has been largely oriented towards supplying export

markets. With the constraints on the public finances in the medium term, the possibility of stimulating growth from domestic sources will be even more limited in the future than it was in the past. In particular, because of the action being taken to stabilise the public finances, the public sector will actually reduce its output in 1988 and 1989. As a result, the growth of the economy over the next five years will be more than ever dependent on developments in the private sector, especially in industry.

Research findings have emphasised two key factors determining the growth of Irish manufacturing output (Bradley and FitzGerald, 1988). First, there is the growth of world output which domestic industrial output has followed closely over the past twenty five years. When foreign firms are doing well they tend to expand their output and Ireland has attracted an increasing share of this growth in output over time. (On average the rate of growth of industrial output has been one percentage point higher than that of the rest of our trading partners, before allowance is made for changes in competitiveness.)

While much of this growth has, in the past, come from foreign multinationals, many of the Irish firms which have prospered have also been geared to meeting a world rather than a domestic demand for their product. The prospects for world industrial output, discussed in Section 2, are for continuing moderate growth over the period.

A second major factor affecting the development of the Irish industrial sector is the change in competitiveness of that sector. Because the Irish industrial sector is generally a price taker on world markets, the appropriate measure of competitiveness is one based on costs rather than the price of output. What is relevant for Irish industrial firms is whether they can produce profitably, given that they have little or no power to influence the price on their foreign markets. This competitiveness factor has been very important in the past in influencing the share of world industrial output which has been produced in Ireland. Because of its importance, and the fact that it is the primary way that we can directly or indirectly influence the development of the industrial sector in the future, we pay special attention to its likely time-path over the next five years.

While much of the attention of economists in the past has focused exclusively on the movement of wage costs, it is important to view the competitiveness of Irish industry in a broader context. The best indicator of overall competitiveness is profitability (measured in our

# FIGURE 3.1

## RATE OF PROFIT IN INDUSTRY



RATE OF PROFIT (PROFITS / VALUE ADDED)
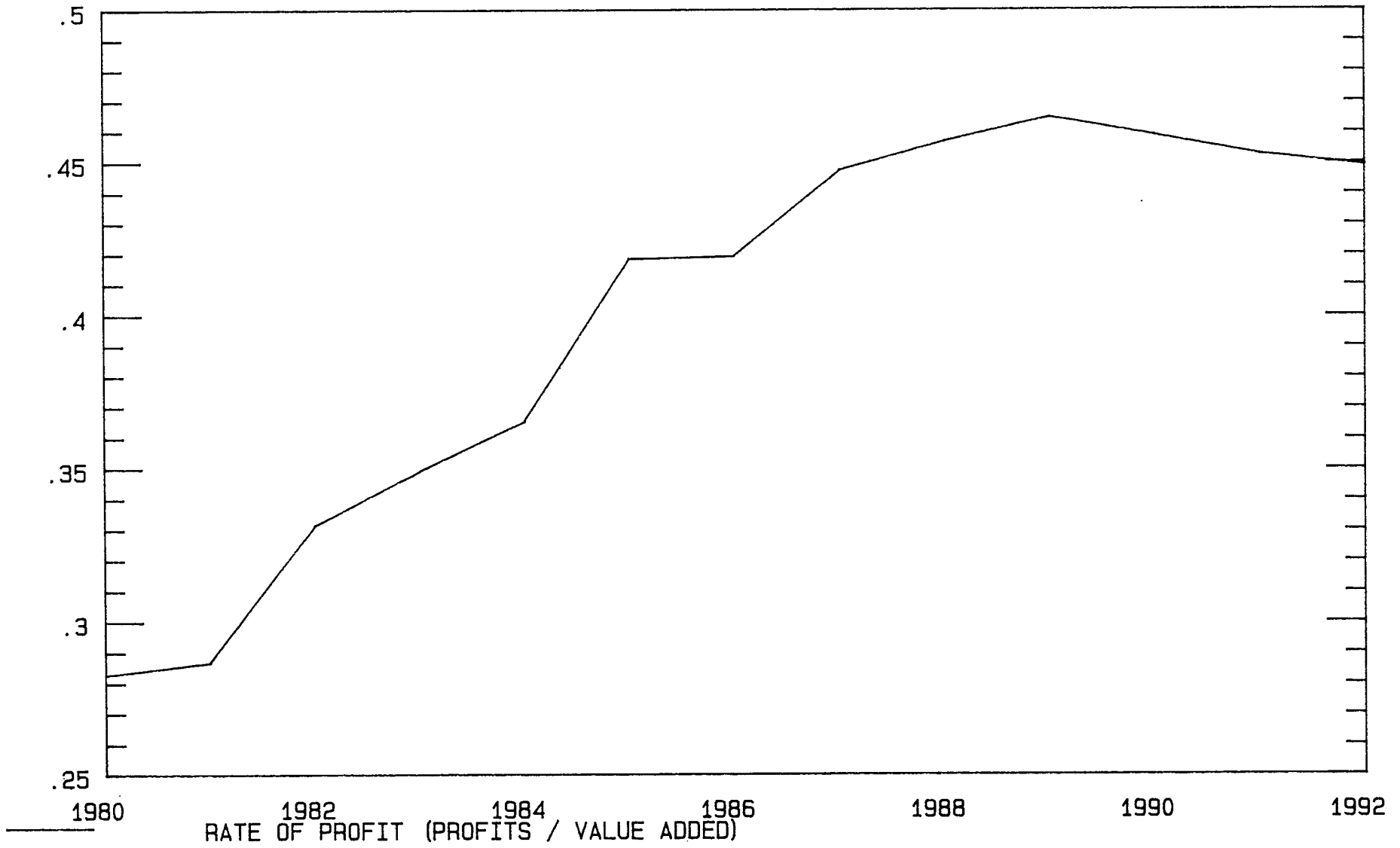
case as profit per unit of value added). In so far as costs, especially wage rates, rise faster than output prices, this will be reflected in lower profits. For Ireland this indicator has the additional advantage (which more traditional cost of capital measures lack) of capturing the effects of the possibility of transfer pricing as a factor attracting foreign investment to Ireland.

Using this measure, the higher the potential profit per unit of output in Ireland compared to the rest of the world, the higher will be the growth of output located in Ireland. In Figure 3.1 we show the rate of profitability for the Irish industrial sector over the period 1980 to 1987 together with the projected rate for the forecast period. As can be seen from this graph, there has been a substantial improvement in the profitability of the industrial sector since 1984 and it is projected to continue improving until 1989.

We anticipate that the continued rise in unemployment next year, and the very tight fiscal stance, will result in a fall in the rate of wage inflation. Experience suggests that the set of circumstances facing workers over the next two years will result in a significant moderation of recent trends in wage rates. While somewhat higher than the increases envisaged in the *Programme for National Recovery*, such a trend would represent a significant improvement in industrial costs. With the pick up in the growth rate of the economy from 1989 onwards, perceptions may change. The limited improvement in the labour market, with some fall in unemployment from its 1988 peak, is forecast to raise substantially the rate of growth of real wages from 1990 onwards, well above the level envisaged in the *Programme for National Recovery*. This high rate of growth in wage rates would push the profit rate in 1992 back to its 1988 level.

As can be seen from Table 3.1, we anticipate that there will be a continuing substantial increase in productivity in this sector throughout the period to 1992. The effect of this continued growth in productivity, combined with the albeit temporary moderation in the trend of real wage rates, is to reduce significantly the share of wages in value added in the 1988-89 period and thus increase profitability.

The trend of profitability shown in Figure 3.1 to some extent underestimates the true rise in profitability as it takes no account of the effects of falling real and nominal interest rates (The standard national

accounting definition of profits ignores all taxes and interest payments paid by firms.) This issue is discussed in more detail in Section 4.10.

In spite of the fall in oil prices in 1986 we feel that industry will continue to install energy efficient plant, believing that real oil prices will eventually rise. However, within the benchmark time horizon we have, as outlined in Section 2, assumed no change in the real price of oil. This means that profitability in Ireland and elsewhere will not be affected by this factor.

In considering the competitiveness of the Irish industrial sector it is not sufficient to consider the profitability of Irish industry in isolation from developments in the rest of the world. However, it is difficult to obtain firm forecasts for the profitability of the industrial sectors of our major trading partners. To the extent that world interest rates prove more favourable than we have assumed, the benefits are likely to be fully passed through to the domestic economy without any overall effect on the relative profitability of Irish industry. The one area where some forecasts for other countries are readily available is for wage rates. As discussed in Section 2, current trends suggest that labour costs in the UK will rise more rapidly than in Ireland. When adjusted for productivity the same is probably true for Germany in 1988. In both cases wage rates are likely to rise significantly faster than output prices. As a result, we have felt it plausible to assume that, over the next five years, the profitability of industry in our major trading partners will not show a major improvement on the current position. (In the past the changes in profitability in the major world economies have been small compared to the changes observed in the Irish economy.) This means that Irish profitability will improve relative to other major economies until 1989 and this will have a direct effect on domestic output.

So far we have considered the factors which will affect the output of domestic manufacturing industry. However, as discussed earlier, the industrial sector in the model includes the building industry. Therefore, it is necessary also to consider factors specifically affecting the building industry. The prospects for this segment of the industrial sector in the short term remain gloomy.

While a fall in interest rates will provide some stimulus to growth in the medium term, the weakness

**TABLE 3.1: Industrial Sector Summary**

|  | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|
| Volume of Output, % change | 9.0 | 0.4 | 2.0 | 7.0 | 2.5 | 5.6 | 6.0 | 5.8 | 5.2 |
| Volume of Investment, % change | 0.6 | −3.0 | 1.1 | 7.5 | 6.4 | 8.0 | 10.0 | 10.0 | 8.0 |
| Wage Rates, % change | 11.7 | 5.8 | 7.5 | 6.5 | 4.4 | 5.0 | 7.6 | 8.4 | 8.0 |
| Labour Productivity, % change | 13.1 | 4.7 | 3.7 | 9.5 | 3.6 | 3.5 | 3.3 | 4.1 | 4.2 |
| Employment ('000) | 319 | 306 | 301 | 294 | 291 | 297 | 305 | 310 | 313 |
| Share of Profits in Value Added | 0.366 | 0.418 | 0.419 | 0.447 | 0.457 | 0.465 | 0.459 | 0.453 | 0.449 |

of demand, especially from the public sector, will retard progress. The high level of emigration will seriously affect the rate of household formation and, therefore, the demand for housing. The development of the Customs House Docks site and certain other major private sector contracts will only go some of the way to replacing the fall in public sector activity in 1988. However, from 1989 onwards, with public sector investment remaining static at its very low 1988 level, a moderate pick up in private sector building activity will, according to our projections, result in some growth in total building investment. It must be recognised that the building industry now accounts for a decreasing share of total industrial output and, as such, has a smaller impact on the sector as a whole than at any time in the past twenty five years.

In the light of the above discussion we expect the growth of the industrial sector to be more buoyant from 1989 onwards than in the early part of the 1980s. The rapid growth of output in 1987 was partly achieved through the use of the extensive amount of spare capacity which existed in the industrial sector at the beginning of that year. However, growth through increased utilisation of existing capacity cannot continue indefinitely. As a result we envisage somewhat slower growth in manufacturing industry output in 1988 than in 1987. When taken together with a major fall in the building industry, due to cutbacks in the *Public Capital Programme*, the forecast for the industrial sector as a whole in 1988 is for growth of only 2.5 per cent.

We anticipate that the improvement in competitiveness in 1987, together with further improvements forecast for 1988 and 1989, will lead to growth in firms' desired level of capacity. Firms react with a lag to changing conditions and they have to be convinced that any improvement in profitability is not ephemeral in nature. It also takes time to install new plant. On this basis, as shown in Table 3.1, we expect industrial output to react with a lag, growing by an average of over 5.5 per cent a year for the 3 years 1989-91. The growth rate is forecast to fall to around 5.2 per cent in 1992 due to the slight disimprovement in profitability consequent on rapid increases in industrial wage rates in the early 1990s. Overall, this would represent a satisfactory performance by the standards of the 1980s.

The bulk of the growth in new capacity is likely to come initially from multinational firms. Domestic firms may be slower to react to the effects of a fall in domestic interest rates on their profitability and overall competitiveness. They are still suffering from the trauma of the high interest rates of the last five years and it will probably take a prolonged period of lower interest rates to change their expectations and convince them that lower interest rates are here to stay. The effects of the fall in domestic interest rates may apply in particular to the commercial semi-state sector which has relied more on borrowings than the rest of the company sector. By 1989 one would expect that the cautionary experience of the last five or seven years should have been overcome and that domestic firms will join in the expansion of industrial capacity.

Falling domestic interest rates are likely to have a more beneficial impact on Irish firms than on multinationals operating in Ireland due to the Irish firms' greater dependence on the Irish capital market. In addition, the opportunities for equity financing may well improve in the 1990s as a result of the falling demand for private sector funds from the public sector. As against this, the prospects for the building sector are less satisfactory, with the level of activity in 1992 remaining well below that of the early 1980s.

As can be seen from Table 3.1, we expect industrial sector investment to recover in the medium term, reflecting the projected improvement in profitability and resulting growth in the desired output of that sector. The projected increase in the share of world output which multinationals want to locate in Ireland will necessitate an increase in plant to produce that output. Similarly, domestic firms can be expected to expand their plant significantly from 1989 onwards.

As shown in Table 3.1, employment in industry is expected to fall again in 1988, mainly due to the problems of the building industry. However, the pick up in overall industrial growth in the period 1989 — 1992 will lead to some employment gains in those years, in spite of a continued fairly high rate of growth in productivity in this sector. The growth in employment slows towards the end of the period as the acceleration in real industrial wage rates begins to have its effect. It is possible that, as discussed earlier, the more favourable climate for domestic firms could lead to a more widely based growth in the industrial sector with greater beneit for employment than we have shown in Table 3.1.

## The Market Services Sector

The market services sector is particularly difficult to analyse since it is made up of a highly heterogeneous grouping of distribution, transport, finance, insurance, professional and personal services. It is a sector that has been subject to fundamental change over the last decade, with radical changes in the pattern of retailing, growth in financial and insurance services, phenomenal developments in information technology, and with the tendency for some activities, previously included in the industrial sector, to be subcontracted out to separate service sector firms. In the large developed economies the share of total employment accounted for by services has been growing rapidly. However, in the Irish case, the services sector is known in the past to have had only weak links with the industrial sector (O'Riordan, 1985).

Even with the growth in exports of tradable services (e.g., tourism, financial services) the chief factor affecting the growth of the aggregate market services sector is domestic demand. As such, developments here will depend on the specific sectoral composition of what is happening elsewhere in the economy. The cutbacks in the public sector, discussed elsewhere, will have an indirect adverse effect on market services growth in 1988, although it will still grow faster than the rate of growth of GNP. From 1989 onwards we expect

the growth of this sector to average just under 4 per cent per annum.

There is substantial spare capacity, especially office space, still available which may limit the need for increased investment in parts of this sector. In addition some of the increase in output may occur in areas which involve personal services and are not very capital intensive. As against this, the plans for the Customs House Dock site could have a significant effect on the growth of investment in 1988 and 1989. By the time this project is completed in the early 1990s it could be expected that investment elsewhere in market services will have picked up. This gives rise to the forecast, shown in Table 3.2, of a steady growth in investment in this sector of 4 per cent per annum.

In the market services sector the growth in employment is driven by the growth of output. The steady growth in the output of this sector is translated into a growth in employment of around 1.2 per cent a year from 1989 onwards (Table 3.2). This assumes that there will be no pick up in the rate of productivity growth in this sector. To the extent that this growth is concentrated in banking and finance, this employment forecast could prove optimistic. However, a rapid growth in certain labour intensive areas of the services sector (tourism, entertainment, etc.), as occurred in the US over the last ten years, could lead to even more rapid employment growth of a type which could, on the other hand, be adversely affected by the forecast rapid growth in wage rates in this sector from 1990 onwards. Without considerable further research into the present structure and likely future development of this sector it is difficult to predict with any certainty developments far into the future.

## The Public Service

In the Health, Education and Public Administration and Defence sectors the cutbacks in public services will have a direct impact in 1988 and 1989. In national accounting practice the output of these sectors is measured by the numbers employed. Obviously, to the extent that employment can be cut while not affecting the level or quality of services this practice will result in some exaggeration of the fall in output. However, it would appear that in many cases the provision of public services will be affected by the cutbacks and that, as shown in Table 3.3, there will be a real fall in the output of these sectors. The valuation of the loss of national welfare or GNP from the loss of public services still remains a problematic area.

In this benchmark projection we have estimated that the fall in employment in 1988, implied by the recently published *Estimates* for 1988, will be around 10,000. The carryover effects of these decisions will result in a further fall in 1989 of over 3,000. From 1990 onwards employment is assumed to remain unchanged. These projections for employment translate into a 5 per cent fall in the volume of output in 1988 and a further fall of over 1.5 per cent in 1989. As outlined in Section 2, it is assumed that there is no volume change in the years after 1989.

Public sector investment will fall drastically in 1988 by over 13 per cent as a result of the recently announced government decisions on the *Public Capital Programme*. We have assumed that there is no significant volume growth in later years from the very much reduced level of public investment in 1988.

## TABLE 3.2: Market Services Sector Summary

|  | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|
| Volume of Output, % change | 2.0 | 2.3 | 0.2 | 4.8 | 1.9 | 3.7 | 3.8 | 4.1 | 3.8 |
| Volume of Investment, % change | −4.9 | −17.6 | 1.6 | 7.6 | 5.0 | 4.0 | 3.9 | 4.1 | 4.0 |
| Wage Rates, % change | 12.7 | 7.3 | 4.2 | 5.3 | 4.4 | 5.0 | 7.6 | 8.4 | 8.0 |
| Employment, ('000) | 391 | 392 | 397 | 403 | 406 | 410 | 415 | 421 | 426 |

## TABLE 3.3: Public Authorities Sector Summary

|  | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|
| Volume of Output, % change |  |  |  |  |  |  |  |  |  |
| Health + Education | 0.1 | −1.7 | 0.0 | −5.8 | −5.4 | −1.9 | 0.0 | 0.0 | 0.0 |
| Public Admin. + Defence | 1.4 | −0.2 | 0.0 | −1.4 | −4.2 | −1.5 | 0.0 | 0.0 | 0.0 |
| Volume of Investment, % change |  |  |  |  |  |  |  |  |  |
| Health + Education | −5.9 | 7.6 | −5.7 | −3.5 | −15.7 | 0.5 | 0.1 | 0.4 | 0.5 |
| Public Admin. + Defence | −13.7 | 13.8 | 14.2 | 12.5 | −3.2 | 0.5 | 0.1 | 0.4 | 0.5 |
| Wage Rates, % change |  |  |  |  |  |  |  |  |  |
| Health + Education | 8.1 | 5.7 | 6.5 | 6.5 | 6.2 | 4.4 | 4.2 | 8.4 | 8.0 |
| Public Admin. + Defence | 9.4 | 6.1 | 6.5 | 6.5 | 6.2 | 4.4 | 4.2 | 8.4 | 8.0 |
| Employment ('000) |  |  |  |  |  |  |  |  |  |
| Health + Education | 139 | 137 | 137 | 129 | 122 | 120 | 120 | 120 | 120 |
| Public Admin. + Defence | 73 | 73 | 72 | 71 | 68 | 67 | 67 | 67 | 67 |

## Agriculture

Since entry to the EEC the future of the Irish agricultural sector has been substantially determined by developments in the CAP. As a result, the continuing future problems for the CAP over the five year period under review mean that we can expect little contribution to the growth of the economy from this sector. However, the agricultural sector is much less dominant in the economy than thirty years ago, so this absence of growth will not prevent progress elsewhere. It does have implications for the food processing industry which are discussed in detail elsewhere in this *Review* (Matthews and O'Connor, *The Food Processing Industry*). We anticipate that there will be a small fall in the volume of net output from this sector in the medium term, largely due to restrictions on output under the CAP. Growth in the output of certain commodities, such as sheep and, possibly, cattle may continue but this will be offset by falls in dairying and cereals. We also anticipate that agricultural prices will grow less rapidly than the rate of inflation, while input prices will at least match the rate of inflation. This price squeeze may result in some improvement in efficiency which could give a better net output performance in the medium term than we have forecast in Table 3.4.

We expect little or no growth in agricultural investment over the medium term, reflecting the poor prospects for output growth in that sector. The continuing decline in employment in agriculture will come as no surprise to readers. It owes less to short-run economic factors than to the overall structure of the industry. The effect of this fall in employment is that average incomes per head in agriculture are projected to rise at around 4 per cent per annum, slightly faster than the rate of inflation. This will be quite close to the rate of increase in wage rates in other sectors of the economy in 1988 and 1989, in spite of the unfavourable prospects for aggregate agricultural incomes. However, the forecast rapid rise in average non-agricultural earnings from 1990 onwards will be significantly greater than that envisaged for those employed in agriculture.

## Total Output — GDP

Taken together the projection for the growth of the different components of Gross Domestic Product result in the time path for GDP at factor cost shown in Table 3.5. Growth will pick up from a low point of around 0.9 per cent in 1988 to between 3.3 and 3.7 per cent in the following four years. In the light of the indexation assumption adopted, the development of taxes on expenditure and subsidies will do little to alter the rate of growth, so that GDP at market prices shows a similar pattern to GDP at factor cost.

It is clear that the driving force behind this growth will be the performance of the industrial sector since the growth in the market services sector is directly explicable by the induced growth in domestic demand. As a result, the margin for uncertainty, which must necessarily be placed on any medium-term projection, stems largely from doubts concerning prospects for the industrial sector. Adverse developments in the world economy could throw the Irish economy seriously off course, either by affecting world growth directly or by disrupting the world financial system. Alternatively, the projected time path for domestic costs may prove to be inaccurate. The possible effects of such adverse developments on the industrial sector, and through it on the aggregate domestic economy, are discussed in Section 4. A less likely possibility is that the growth of world output could prove more buoyant, in particular if there were concerted action by the major economic powers to stimulate growth and reduce international interest rates.

### 3.2: PRICES AND WAGE RATES

#### Prices

The major factor in the development in domestic prices over the medium term is the likely behaviour of world inflation together with the assumptions concerning the Irish pound rate of exchange against other important currencies. The outlook for world inflation has been discussed in Section 2. Generally we have assumed that the price of manufactured goods will rise by 3 per cent per annum over the five year period. The technical assumption that the exchange rate between the Irish pound and other major currencies will remain unchanged over the period means that the world rate of inflation will be transmitted directly to producer prices for the Irish economy.

The key price of gross output of transportable goods industries is projected to rise by just under 3 per cent in the medium-term (Table 3.6). This price is expected to rise less rapidly than the price of world manufactured goods because of the heavy weighting of food products in the output of the Irish manufacturing sector. (The price of these products is expected to grow at only 2 per cent a year over the period due to the chronic over-supply situation in agriculture.) The price of value added in the industrial sector is expected to rise by marginally less than the price of gross output of transportable goods industries in 1988. Thereafter it will rise by 3 per cent a year in line with the rise in gross output prices. This assumes that the price of material inputs, excluding agricultural products, also rises at 3 per cent a year. A major change in oil prices could, of course, alter this picture.

**TABLE 3.4: Agricultural Sector Summary**

|                          | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|--------------------------|------|------|------|------|------|------|------|------|------|
| Volume of Output, % change | 13.9 | −1.9 | −8.6 | 4.3 | −0.1 | 0.7 | −0.7 | −0.5 | −0.5 |
| Employment ('000)        | 181  | 171  | 168  | 163  | 158  | 154  | 150  | 146  | 141  |

## TABLE 3.5: Output GDP at Factor Cost

| | 1987 £m | Volume % | Price % | Contrib to growth % | 1988 £m | Volume % | Price % | Contrib to growth % | 1989 £m | Volume % | Price % | Contrib to growth % | 1990 £m | Volume % | Price % | Contrib to growth % | 1991 £m | 1992 £m | Volume % | Price % | Contrib to growth % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agriculture | 1,793 | -0.1 | 1.0 | -0.01 | 1,810 | 0.7 | 1.6 | 0.08 | 1,851 | -0.7 | 1.6 | -0.09 | 1,866 | -0.5 | 1.6 | -0.06 | 1,885 | 1906 | -0.5 | 1.6 | -0.05 |
| Industry | 6,673 | 2.5 | 2.5 | 1.13 | 7,013 | 5.6 | 3.0 | 2.60 | 7,629 | 6.0 | 3.0 | 2.87 | 8,334 | 5.8 | 3.0 | 2.82 | 9,081 | 9,837 | 5.2 | 3.0 | 2.57 |
| Market Services | 6,747 | 1.9 | 0.4 | 0.77 | 6,903 | 3.7 | 2.0 | 1.50 | 7,299 | 3.8 | 3.6 | 1.57 | 7,849 | 4.1 | 3.8 | 1.68 | 8,479 | 9,135 | 3.8 | 3.8 | 1.58 |
| Health + Education | 1,822 | -5.4 | 6.2 | -0.57 | 1,831 | -1.9 | 4.4 | -0.19 | 1,875 | 0.0 | 4.2 | 0.00 | 1,954 | 0.0 | 8.4 | 0.00 | 2,118 | 2,288 | 0.0 | 8.0 | 0.00 |
| Public Admin. + Defence | 1,162 | -4.2 | 6.2 | -0.28 | 1,182 | -1.5 | 4.4 | -0.10 | 1,216 | 0.0 | 4.2 | 0.00 | 1,267 | 0.0 | 8.4 | 0.00 | 1,374 | 1,484 | 0.0 | 8.0 | 0.00 |
| Adj for Financial Services | 896 | 1.8 | 2.1 | 0.09 | 931 | 5.1 | 2.6 | 0.26 | 1,003 | 5.8 | 3.2 | 0.30 | 1,095 | 6.1 | 3.9 | 0.32 | 1,207 | 1,324 | 5.7 | 3.8 | 0.30 |
| GDP at Factor Cost | 17,300 | 0.9 | 2.1 | 0.95 | 17,808 | 3.3 | 2.6 | 3.64 | 18,866 | 3.6 | 3.2 | 4.06 | 20,174 | 3.7 | 3.9 | 4.12 | 21,731 | 23,325 | 3.4 | 3.8 | 3.79 |
| Taxes on Expenditure | 3,593 | 0.3 | 3.0 | 0.02 | 3,711 | 1.8 | 3.1 | 0.29 | 3,892 | 1.7 | 3.9 | 0.27 | 4,111 | 2.3 | 4.1 | 0.37 | 4,378 | 4,651 | 2.0 | 4.2 | 0.31 |
| Subsidies (-) | 1,477 | 0.2 | -1.5 | 0.02 | 1,458 | 1.4 | 2.2 | 0.14 | 1,511 | 0.6 | 2.3 | 0.06 | 1,555 | 0.9 | 2.3 | 0.09 | 1,605 | 1,655 | 0.8 | 2.4 | 0.07 |
| GDP at Market Prices | 19,417 | 0.8 | 2.5 | 0.97 | 20,061 | 3.2 | 2.6 | 3.79 | 21,247 | 3.6 | 3.3 | 4.27 | 22,731 | 3.7 | 3.9 | 4.40 | 24,504 | 26,320 | 3.4 | 3.9 | 4.04 |
| Net Factor Income | -2,154 | 8.2 | 2.8 | -1.35 | -2,396 | 4.6 | 2.8 | -0.82 | -2,577 | 5.5 | 2.8 | -0.99 | -2,794 | 3.8 | 2.9 | -0.70 | -2,983 | -3,142 | 2.4 | 2.9 | -0.44 |
| GNP at Market Prices | 17,263 | -0.4 | 2.7 | -0.38 | 17,665 | 3.0 | 2.6 | 2.96 | 18,670 | 3.3 | 3.4 | 3.28 | 19,937 | 3.7 | 4.1 | 3.70 | 21,521 | 23,178 | 3.6 | 4.0 | 3.60 |

## TABLE 3.6: Price Deflators and Wage Rates

| | 1983 | 1984 | 1985 | 1986 | % Changes 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|---|
| Consumption | | | | | | | | | | |
| Personal | 8.6 | 9.4 | 4.5 | 3.6 | 3.0 | 3.0 | 3.0 | 3.7 | 3.7 | 3.7 |
| Public, Total | 9.4 | 6.7 | 5.5 | 5.0 | 6.5 | 4.1 | 3.9 | 4.1 | 7.0 | 6.8 |
| Investment | | | | | | | | | | |
| Building | 5.8 | 7.0 | 4.9 | 4.7 | 2.7 | 2.5 | 2.2 | 3.4 | 3.8 | 3.6 |
| Machinery + Equipment | 6.7 | 7.1 | 4.2 | -3.4 | -0.9 | 0.6 | 2.5 | 3.3 | 3.5 | 3.4 |
| Exports | | | | | | | | | | |
| Agricultural | 7.1 | 3.6 | -0.0 | -1.7 | 3.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Industrial | 9.5 | 8.8 | 3.3 | -8.2 | -2.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Services | 10.6 | 12.9 | 5.5 | -0.0 | 2.7 | 3.0 | 3.0 | 3.7 | 3.7 | 3.7 |
| Imports | | | | | | | | | | |
| Energy | 2.8 | 9.5 | -1.3 | -45.5 | -4.7 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Non-energy Goods | 4.5 | 9.8 | 2.7 | -8.1 | -2.9 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Services | 15.6 | 10.5 | 5.5 | 2.4 | 2.7 | 2.9 | 3.4 | 3.5 | 3.4 | 3.4 |
| Industrial Output | | | | | | | | | | |
| World | 9.5 | 9.6 | 1.6 | -8.3 | 2.1 | 3.1 | 3.0 | 3.0 | 3.0 | 3.0 |
| Transportable Goods | | | | | | | | | | |
| Industry | 9.1 | 4.6 | 0.5 | -5.7 | 1.8 | 2.8 | 2.7 | 2.7 | 2.7 | 2.7 |
| Average Annual Earnings | | | | | | | | | | |
| Industry | 13.2 | 11.7 | 5.8 | 7.5 | 6.5 | 4.4 | 5.0 | 7.6 | 8.4 | 8.0 |
| Market Services | 10.2 | 12.7 | 7.3 | 4.2 | 5.3 | 4.4 | 5.0 | 7.6 | 8.4 | 8.0 |
| Health + Education | 11.5 | 8.1 | 5.7 | 6.5 | 6.5 | 6.2 | 4.4 | 4.2 | 8.4 | 8.0 |
| Public Admin. + Defence | 9.7 | 9.4 | 6.1 | 6.5 | 6.5 | 6.2 | 4.4 | 4.2 | 8.4 | 8.0 |

Consumer prices are expected to rise by 3 per cent a year in 1988 and 1989 in line with our assumption concerning the growth in world prices and our technical assumptions concerning the rate of exchange and rates of indirect taxation. The rapid increase in domestic wage costs in the early 1990s could be expected to lead to a more rapid rise in domestic consumer prices than in the factory gate price of tradable goods. As a result, we envisage an inflation rate of around 3.7 per cent in the early 1990s. The rate of inflation in Irish consumer prices may differ somewhat from that of our competitors in 1988 and 1989 due to the rather long lags in the impact of the exchange rate changes of 1986. Already we expect the inflation rate in the UK to be higher than in Ireland, while the rate of inflation in Germany remains very low. However, our technical assumption that exchange rates remain fixed over the five year period to 1992 implies a much greater degree of convergence of consumer prices.

The prices of the other components of expenditure will tend to mirror those of industrial output. In 1988 the model indicates that the increase in the price of investment will be somewhat below the general rate of inflation due to the longer lags in the transmission of the price reductions of 1985-6 into the prices of capital goods. Otherwise, the rate of increase in prices, as reflected in the price deflator of GDP, will tend to stabilise in the medium-term at between 3 and 4 per cent. As explained above, this is slightly above the assumed world rate of inflation for manufactured goods due to the rapid increase in domestic costs projected for the early 1990s.

The importance of our technical assumption concerning fixed exchange rates must be stressed. The recent major change in the value of the dollar, if repeated in the future, could alter the prospects for world inflation as viewed from Ireland (i.e., in Irish pound terms) and could result in a somewhat lower rate of domestic inflation in the immediate future. Alternatively, if the DM were to change its position in the EMS over the next five years this could have the opposite effect on domestic inflation. In framing domestic policy this uncertainty concerning world inflation and its impact on the domestic economy must be borne in mind.

## Wage Rates

In our model we assume that industrial wage rates are determined in a bargaining process where employers and employees in industry are in contention for a share of added-value, but where the price of industrial output is determined in world markets. The exchange rate affects domestic wage rates through its effects on the price of output. Historically wage inflation in the industrial sector has adjusted to the 'room' for wage increases, i.e., an increase which is consistent with a 'normal' profit share. In addition, *direct and indirect tax rates (including employers' social insurance) drive* a 'wedge' between the firm's real labour costs and the real wage received by the workforce. The product wage in industry (the percentage change in wage rates less the percentage change in output prices) is then a function of this wedge variable and of trade union bargaining power, proxied by the unemployment rate.

Our research findings show that the tax wedge and the bargaining power proxy have a significant influence on wage developments. In the short-run, approximately one half of any tax wedge effect is shifted back on employers. In the long run, the extent to which the tax wedge can be shifted is affected by the complex inter-action of the effects of wage rates on unemployment and of unemployment on wage rates. Since output prices are fixed in world markets, any tax shifting to employers results in reduced profitability, loss of com-petitiveness and, ultimately, loss of jobs. The effect of unemployment on wages (the so called Phillips curve) was found to be strong and indicates that in the short run a one percentage point rise in the unemployment rate reduces wage rates by 2 per cent below what they would otherwise have been. The formulation we use implies that any deterioration (or improvement) in the labour market has an immediate effect on real wage *levels*, but no long-run effect on wage *inflation*. This should be distinguished from recent results by Walsh, (1987), where a form of Phillips curve is developed in which labour market deterioration has an initially small but, presumably, enduring effect on wage *inflation*.

Wage inflation in the market services sector is assumed in the model to be linked to wage inflation in the industrial sector. This does not mean that any wage inflation must start within the industrial sector. However, it does imply that the long-run maintenance of industrial competitiveness acts as a constraint on intersectoral wage differentials when industrial prices are determined abroad but service prices are deter-mined as a mark-up on costs. While the model normally treats public sector wage rates in the same manner, in the benchmark projection we have assumed that the time path for public service wage rates over the period 1988 to 1990 is in line with the *Programme for National Recovery* (see Section 2). For 1991 and 1992 they are assumed to follow trends in the private sector. For the private sector this *Programme* is not mandatory and we have assumed that wage rates develop along the lines discussed above.

Using this model of wage determination,the cumulative effects of the rise in unemployment could be expected to exercise a significant effect on the expectations of employees in the industrial sector in 1988 and 1989 (Table 3.6). In addition the lagged effects of the fall in the rate of inflation in 1986-87 and the assumption that tax rates will not rise any further above their 1987 levels would, in the absence of other government action, lead to a substantial reduction in the rate of increase in wages in 1988 and 1989. The active intervention of the government together with the cuts in public sector numbers is likely to reinforce this trend. On this basis we forecast that industrial wage rates will rise by between 4.4 and 5 per cent in 1988 and 1989. As commented on above, while somewhat above the rate of increase envisaged in the *Programme*, this should still result in a significant improvement in competitiveness.

As the problem of the public sector finances begins to come under control, the economy starts to recover, and unemployment shows a small fall, it can be expected that there will be a resumption of higher industrial wage inflation. The forecast shows industrial wage rates rising by between 7.5 and 8.5 per cent in the years 1990 and 1992. Given an inflation rate of just under 4 per cent, this would represent a substantial rise in real wage rates and, as discussed earlier, would lead to some loss of competitiveness.

The development of wage inflation in the services sector is likely to mirror that in the industrial sector over the period. This contrasts with the experience over the last twenty five years when wage inflation was higher in services tending to close the gap in wage levels between the two sectors. This expected change in behaviour reflects the fact that the cutbacks in the public sector have their initial effects on the services sector through a loss of domestic demand. In the public sector in 1988 and 1989, when exceptional factors are excluded (the cost of the redundancies and early retirements, etc.), pay rates will rise at roughly the same rate as in the private sector. However, the position will be changed in 1990 when we envisage private sector wage rates increasing rapidly while public sector wage rates are held back by the *Programme for National Recovery*. As a result of our assumption that wage rates in the private and public sectors grow at the same rate in 1991 and 1992, we anticipate a rapid increase in public service pay rates in those years.

## 3.3: INCOMES

Having examined the likely trends in wage rates and employment over the next five years we now turn to the question of the likely growth in incomes. We first examine agricultural incomes and non-agricultural employees' incomes. We then consider the likely trend in transfers and other personal income. Finally we examine the interaction of the growth in incomes with the direct tax system to derive a projection for revenue from taxes on personal income and for the growth in personal disposable income. Full details are given in Table 3.7.

## TABLE 3.7: Personal Income and Personal Expenditure

| | 1986 £m | Change % | 1987 £m | Change % | 1988 £m | Change % | 1989 £m | Change % | 1990 £m | Change % | 1991 £m | Change % | 1992 £m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agricultural etc. Income | 1,310 | 12.6 | 1,475 | 1.1 | 1,492 | 2.5 | 1,530 | 0.6 | 1,539 | 0.6 | 1,548 | 0.6 | 1,557 |
| Non-ag. Wage Income | 9,829 | 4.5 | 10,242 | 3.3 | 10,609 | 5.6 | 11,204 | 8.3 | 12,129 | 9.6 | 13,295 | 8.9 | 14,447 |
| Transfer Income | 3,410 | 4.5 | 3,565 | 2.1 | 3,639 | 2.4 | 3,728 | 3.2 | 3,846 | 3.9 | 3,996 | 4.2 | 4,165 |
| Other Personal Income | 2,079 | 9.9 | 2,284 | 1.9 | 2,327 | 8.1 | 2,516 | 4.8 | 2,636 | 3.1 | 2,717 | 1.1 | 2,748 |
| Personal Income | 16,627 | 5.8 | 17,597 | 2.7 | 18,068 | 5.0 | 18,976 | 6.2 | 20,149 | 7.0 | 21,556 | 6.5 | 22,946 |
| Taxes on Personal Income | 3,624 | 10.4 | 4,000 | 2.6 | 4,105 | 5.3 | 4,321 | 8.3 | 4.679 | 8.8 | 5,089 | 8.0 | 5,496 |
| Disposal Income | 13,003 | 4.6 | 13,596 | 2.7 | 13,963 | 5.0 | 14,655 | 5.6 | 15,470 | 6.4 | 16,466 | 6.0 | 17,450 |
| Personal Consumption (−) | 10,552 | 3.8 | 10,950 | 3.0 | 11,274 | 4.5 | 11,786 | 5.2 | 12,399 | 5.9 | 13,134 | 5.6 | 13,867 |
| Personal Savings | 2,451 | 8.0 | 2,647 | 1.6 | 2,689 | 6.7 | 2,869 | 7.1 | 3,072 | 8.5 | 3,332 | 7.5 | 3,583 |
| Tax Ratios (% pers. income) average | 21.8 | — | 22.7 | — | 22.7 | — | 22.8 | — | 23.2 | — | 23.6 | — | 24.0 |
| Savings Ratios (% disposable income) Average | 18.8 | 3.3 | 19.5 | −1.1 | 19.3 | 1.6 | 19.6 | 1.4 | 19.9 | 1.9 | 20.2 | 1.5 | 20.5 |

## Agriculture

Because of the limits on production and the general oversupply situation for agriculture, the prospects for farmers' incomes over the next five years are not very good. As can be seen from Table 3.7, the average rise over that period is projected at only just over 1 per cent, all of which will derive from limited increases in prices rather than higher output. However, the outflow of people from the agricultural sector will continue over the period and the result will be a significant increase in income per head for those remaining in farming.

## Non-Agricultural Wages

As outlined above, wage rates are expected to grow relatively slowly in 1988 and 1989 and to pick up from 1990 onwards. Over the five year period under review average non-agricultural earnings are projected to grow by just over 6.4 per cent per annum, considerably faster than the projected rate of inflation. With non-agricultural employment rising by an average of around 0.6 per cent a year, the average annual rise in total wage income will be around 7 per cent per annum for the five year period. However, the pattern of growth is not smooth over the period with the rise in 1988 and 1989 being well below that average because of the expected poor performance of employment in those years and the temporary slowdown in the growth of real wage rates.

## Transfers

The bulk of transfer payments are assumed to be indexed to the rate of inflation over the five year period. Salaries of second- and third-level teachers are also included in transfers and their treatment is in line with that described earlier for the rest of public service pay. The expenditure on unemployment benefit and assistance is also affected by the changes in the numbers unemployed over the period. When all these factors are taken together the rise in transfer payments is an average of 3.2 per cent a year over the period 1988-92.

## Other Personal Income

Non-agricultural profits are projected to grow at around 6.7 per cent a year over the five years. Around 20 per cent of these profits will be retained by companies to fund new investment, and the high rate of profit repatriation will siphon off around 60 per cent of the increase in industrial profits (see O'Malley and Scott, this Review). The residual profits retained in the country will find their way back into the personal sector boosting consumption. While total national debt interest will grow more slowly than the other main components of personal income at around 4.4 per cent a year, interest on domestic debt will rise at around 7.4 per cent per annum. When account is taken of government trading and investment income and net factor income paid abroad, the net effect of these different elements is to increase other personal income over the five years by an average of 3.8 per cent per annum.

## Taxes On Personal Income

We have assumed that tax bands and allowances will be adjusted each year to keep the average rate of income tax unchanged. As personal income is projected to rise more rapidly than the rate of inflation, especially in later years, this will involve something more than indexation to the rise in consumer prices. Because of the higher growth projected for incomes liable to tax, the average tax rate will still show some limited growth over the period in spite of indexation. This contrasts with the last five years when there was a substantial increase in the average tax rate, partly due to the introduction of the DIRT tax in 1986 and 1987. The combined effect of this indexation assumption on revenue from direct taxation and the projected rise in personal income is to give an increase in personal disposable income of an average of around 5.1 per cent a year. This rise outstrips the rate of inflation, giving an increase in real personal disposable income of an average of over 2 per cent per annum from 1989 to 1992.

## 3.4: EXPENDITURE ON GNP

### Consumption

The key to the growth in personal consumers' expenditure in the medium term is the development of personal disposable income. In the model, on the basis of past experience, it is assumed that at the margin 67 per cent of all additional income will be spent, the rest going into personal savings. However, in spite of the fact that much research effort in Ireland has been put into the analysis of consumer behaviour there is still considerable uncertainty concerning the range of factors which drive it.

For the period 1988 to 1992 a substantial part of the growth in personal incomes is likely to come from non-wage income. As a result, there must be some doubt as to whether the propensity to consume, derived from past experience, will be appropriate in the future. To the extent that the increased income accrues to the personal sector through the growth of pension funds or life assurance funds, it may be recycled directly into saving without any effect on consumption in the short to medium term, thereby raising the savings ratio. Econometric tests using historical data did not find this to be the case, but the growth in the size and importance of this sector, together with the disproportionate growth in the income accruing to it, may alter the relationship in the future.

The growth of unemployment may affect consumers' behaviour through increasing uncertainty, leading them to increase their saving to guard against the possibility of becoming unemployed in the future. As against this the assumed fall in interest rates could serve to increase the propensity to consume by making savings less attractive, facilitating consumer borrowing, and by causing some increase in the value of fixed interest debt which could affect consumption through increasing personal sector wealth. However, the significance of wealth in determining the pattern of consumption remains an area of considerable uncertainty. In Section 4 we consider the possible effects of a different pattern of savings on the behaviour of the economy in the medium term. In our benchmark projection we have assumed that past experience will prove a reliable guide to future behaviour and that there will be a rise in the savings ratio of around 1 percentage point over the five years to 1992.

Because of the impact of the fiscal retrenchment in 1988 we expect that there will be no growth in consumption in that year. However, even with a rising savings ratio, the growth in disposable income over the following four years will result in a volume growth in consumption averaging around 1.7 per cent a year (Table 3.8). This pattern of growth, which is moderate compared to the experience of the late 1970s, reflects the tight budgetary situation and relatively low growth in real wage rates in 1988 and 1989.

### Investment

The details of the growth in investment, classified by the sector undertaking it, have already been discussed.

Here we consider both the likely time path for housing investment, which is primarily determined by developments in the personal sector, and the breakdown of total investment between building and machinery and equipment. Details are given in Table 3.8.

The volume of investment in housing is affected by a number of factors. The 1988 cuts in public housing investment are assumed to follow the lines of those announced in the *Public Capital Programme*. The expected absence of growth in real personal disposable income will ensure that there is no growth in the private sector demand for housing despite the significant reduction in mortgage interest rates. Hence, total housing investment will decline in volume in 1988.

The industry will be entering 1989 at a very low level of activity. In the medium term the growth in this sector will be dampened by the high level of emigration. The adverse economic circumstances of the last five years slowed the rate of household formation and it might be expected that a change in this trend could provide some limited scope for increased activity in the early 1990s. From 1989 onwards it is anticipated that there will be some growth in real personal disposable income. While real interest rates in 1992 will still remain well above the levels experienced in the 1970s, the fall in interest rates over the period should have a significant though delayed effect. The shock of the rise in real interest rates over the last 5 or 7 years will make the household sector cautious about incurring new liabilities, especially through 'trading up' and buying larger houses. However, by 1989, if interest rates fall as assumed in this benchmark projection, the household sector may begin to believe that the fall is permanent and to react accordingly. Consequently, we expect housing investment to show an average growth of over 5 per cent over the four years 1989-92. In 1992 the level of activity will still be very much below that experienced in the 15 years 1970-85.

The concentration of new investment on increasing the capital stock of the industrial sector will mean that investment in machinery and equipment in 1988 and 1989 will grow somewhat more rapidly than investment in buildings. The fact that there is still a significant volume of spare office space available, and that we assume a major fall in the volume of public sector investment in 1988 followed by no growth from 1989 onwards, will reinforce this trend.

### Stocks

While the behaviour of stocks can be an important source of instability in short-term forecasts, their movements in the medium term are somewhat more predictable in that fluctuations tend to cancel one another out. The model assumes that in the industrial sector the stock output ratio shows little change in the medium-term. This means that the working capital requirements of that sector bear a fairly constant relationship to turnover. Over the four years 1989-92 non-agricultural stock building will contribute around 0.25 per cent per annum to the growth rate of GNP.

In the case of agriculture we have made the technical

## TABLE 3.8: Expenditure on GNP

| | 1987 £m | Volume % | Price % | 1988 £m | Contrib to growth % | Volume % | Price % | 1989 £m | Contrib to growth % | Volume % | Price % | 1990 £m | Contrib to growth % | Volume % | Price % | 1991 £m | Contrib to growth % | Volume % | Price % | 1992 £m | Contrib to growth % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Personal Consumption | 10,950 | -0.0 | 3.0 | 11,274 | -0.03 | 1.5 | 3.0 | 11,786 | 1.0 | 1.4 | 3.7 | 12,399 | 0.95 | 2.2 | 3.7 | 13,134 | 1.39 | 1.8 | 3.7 | 13,867 | 1.16 |
| Public Consumption | 3,666 | -4.9 | 4.1 | 3,629 | -1.07 | -1.1 | 3.9 | 3,728 | -0.24 | 0.0 | 4.1 | 3,879 | 0.00 | -0.0 | 7.0 | 4,152 | -0.00 | 0.0 | 6.8 | 4,433 | 0.00 |
| Fixed Investment | 3,497 | -0.4 | 1.2 | 3,524 | -0.11 | 4.7 | 2.2 | 3,771 | 1.22 | 5.9 | 3.3 | 4,129 | 1.57 | 6.2 | 3.7 | 4,547 | 1.69 | 5.0 | 3.5 | 4,941 | 1.39 |
| Building | 1,502 | -7.0 | 2.1 | 1,426 | -0.73 | 3.9 | 2.1 | 1,513 | 0.38 | 6.2 | 3.5 | 1,662 | 0.60 | 6.5 | 3.9 | 1,840 | 0.66 | 4.9 | 3.7 | 2,002 | 0.51 |
| Machinery | 1,995 | 3.9 | 1.2 | 3,098 | 0.61 | 5.1 | 2.4 | 2,259 | 0.84 | 5.8 | 3.2 | 2,467 | 0.97 | 6.0 | 3.5 | 2,706 | 1.03 | 5.1 | 3.4 | 2,939 | 0.89 |
| Final Domestic Demand | 18,113 | -1.1 | 2.8 | 18,426 | -1.21 | 1.7 | 2.9 | 19,285 | 1.98 | 2.2 | 3.5 | 20,406 | 2.52 | 2.8 | 4.1 | 21,833 | 3.08 | 2.3 | 4.0 | 23,242 | 2.55 |
| Stock Building | 125 | | 1.5 | 126 | -0.01 | | -1.8 | 154 | 0.28 | | 2.8 | 202 | 0.37 | | 2.8 | 235 | 0.23 | | 2.8 | 252 | 0.08 |
| Total Domestic Demand | 18,238 | -1.1 | 2.8 | 18,552 | -1.22 | 2.0 | 2.8 | 19,440 | 2.27 | 2.5 | 3.4 | 20,608 | 2.89 | 2.9 | 4.0 | 22,068 | 3.31 | 2.3 | 4.0 | 23,494 | 2.63 |
| Total Exports | 11,442 | 5.1 | 2.8 | 12,361 | 4.43 | 7.7 | 2.8 | 13,683 | 7.07 | 7.7 | 2.8 | 15,155 | 7.39 | 7.7 | 2.9 | 16,792 | 7.73 | 7.4 | 2.9 | 18,555 | 7.71 |
| Agricultural | 1,893 | 0.0 | 2.0 | 1,930 | | 1.9 | 2.0 | 2,006 | | -0.7 | 2.0 | 2,032 | | -0.5 | 2.0 | 2,061 | | -0.5 | 2.0 | 2,092 | |
| Industrial | 8,237 | 6.2 | 3.0 | 9,010 | | 9.1 | 3.0 | 10,129 | | 9.6 | 3.0 | 11,436 | | 9.5 | 3.0 | 12,898 | | 9.0 | 3.0 | 14,482 | |
| Merchandise | 10,130 | 5.1 | 2.8 | 10,940 | 4.00 | 7.9 | 2.8 | 12,135 | 6.56 | 8.0 | 2.8 | 13,468 | 6.93 | 8.0 | 2.8 | 14,959 | 7.29 | 7.7 | 2.8 | 16,574 | 7.31 |
| Services | 1,312 | 5.1 | 3.0 | 1,421 | 0.43 | 5.8 | 3.0 | 1,549 | 0.51 | 5.1 | 3.7 | 1,687 | 0.46 | 4.7 | 3.7 | 1,833 | 0.44 | 4.2 | 3.7 | 1,981 | 0.40 |
| Total Demand | 29,680 | 1.6 | 2.5 | 30,913 | 3.21 | 4.5 | 2.5 | 33,123 | 9.33 | 4.9 | 2.9 | 35,763 | 10.29 | 5.2 | 3.3 | 38,860 | 11.04 | 4.8 | 3.3 | 42,050 | 10.34 |
| Total Imports | 10,262 | 2.6 | 3.1 | 10,852 | 2.24 | 6.3 | 3.0 | 11,877 | 5.56 | 6.6 | 2.9 | 13,032 | 6.03 | 7.0 | 2.9 | 14,355 | 6.64 | 6.5 | 2.9 | 15,730 | 6.32 |
| Merchandise | 9,025 | 2.4 | 3.0 | 9,514 | 1.89 | 6.4 | 3.0 | 10,432 | 5.24 | 6.8 | 3.0 | 11,478 | 5.74 | 7.3 | 3.0 | 12,686 | 6.35 | 6.7 | 3.0 | 13,940 | 6.04 |
| Services | 1,237 | 5.1 | 2.9 | 1,337 | 0.35 | 4.5 | 3.4 | 1,444 | 0.32 | 4.0 | 3.5 | 1,554 | 0.29 | 3.9 | 3.4 | 1,670 | 0.29 | 3.7 | 3.4 | 1,790 | 0.28 |
| Gross Domestic Product | 19,417 | 0.8 | 2.5 | 20,061 | 0.97 | 3.2 | 2.6 | 21,247 | 3.78 | 3.6 | 3.3 | 22,731 | 4.26 | 3.7 | 3.9 | 24,505 | 4.39 | 3.4 | 3.9 | 26,320 | 4.02 |
| Net Factor Income | -2,154 | 8.2 | 2.8 | -2,396 | -1.35 | 4.6 | 2.8 | -2,577 | -0.82 | 5.5 | 2.8 | -2,794 | -0.99 | 3.8 | 2.9 | -2,983 | -0.70 | 2.4 | 2.9 | -3,142 | -0.44 |
| Gross National Product | 17,263 | -0.4 | 2.7 | 17,665 | -0.38 | 3.0 | 2.7 | 18,670 | 2.95 | 3.3 | 3.4 | 19,937 | 3.27 | 3.7 | 4.1 | 21,521 | 3.69 | 3.6 | 4.0 | 23,178 | 3.58 |

assumption that changes in stocks cease in 1989. This may be unrealistic in the light of the expected shift away from dairying and cereals to cattle and sheep production. However, as any change in this assumption would, in the short term, be exactly offset by a change in agricultural exports, the implications for growth are not significant.

For intervention stocks it is assumed that there will be no further build up after 1988 due to the critical state of the CAP. As with agricultural stocks, any variation in this item of expenditure will be offset by a change in agricultural exports. If the CAP surplus problem were brought under control in the medium term one might expect the existing stocks in intervention to be sold off leading to a fall in stocks offset by a temporary increase in the volume of agricultural exports and EEC subsidies. This would give a temporary benefit to the balance of payments. It would also have a temporary beneficial effect on the public sector finances which have been affected in recent years by the need to fund intervention purchases until payments came through from the EEC.

## Exports

As outlined above in the discussion of stocks, agricultural exports may be affected in the short term by deviations from the projected growth of agricultural and intervention stocks. In the longer term they are determined by the trend of agricultural output. The volume of agricultural exports is expected to show little growth in the medium term in line with the projection for agricultural output, though an increase in added value could give a somewhat better outturn.

Industrial exports in the medium term are driven by the growth of supply (i.e., industrial output). As a result, the projected growth for this component of exports is determined by the projected growth in industrial output. Industrial exports tended to grow much more rapidly than industrial output in the past as the industrial sector reduced its dependence on the domestic market. Most of the growth in capacity in the sector was intended to supply export markets and a disproportionate share of firms closing had been dependent on the domestic market. While there is scope for a further significant increase in the share of industrial output going for export, it is likely to be slower than in the past, as the share of output which is exported rises. As a result, the growth rate of exports is expected to bear a closer relationship to the growth rate of industrial output in the future.

In the past, tourism exports and exports of other services have grown significantly faster than world trade and a similar pattern is assumed in the medium term. Obviously this item is affected by a number of other factors, some of which are difficult to take into account in a projection such as this (e.g., the effect of civil unrest in Northern Ireland and elsewhere on the pattern of tourism). In addition, no account has been taken of the effects of the potential growth in financial services exports. However, this latter omission may not be that important as much of the profits accruing from this innovation may be repatriated, as with the multi-

national industrial sector, leaving a relatively small net effect on the balance of payments.

## Imports

Imports are primarily used as an input into the domestic productive sector. They will, be affected by the factors which affect the supply side of the economy, especially the factors affecting the industrial sector. It is only in so far as they enter directly into final demand, especially into consumption, that other factors become important. As a result, the determination of the volume of imports is a complex process.

In our benchmark projection for the years 1988 to 1992 we see a very strong growth in industrial output and exports. Because of the nature of the industrial sector, industrial output has in the past had a high import content (FitzGerald, 1987). Experience in recent years suggests that this pattern has at least been maintained. When the profit repatriations associated with the growth in exports are added to the material imports needed to produce them, the growth in industrial output in recent years would appear to have added rather less to the Irish economy than a cursory examination of the total exports or total sales of the multinationals would suggest. While the multinational firms have undoubtedly made a significant contribution to the economy, this highlights the fact that the bulk of this contribution has come directly through their wage bill. In our benchmark projection we have assumed that the pattern of output growth in the medium term will be in line with past experience. The fact that circumstances over the next five years will be more favourable to growth by domestic firms than in the first half of the 1980s raises the possibility that the actual outturn could be more favourable than we have assumed here.

Investment in machinery and equipment, which is expected to grow quite rapidly, has an even higher import content than industrial exports. The factors likely to cause a fairly rapid growth in the volume of imports in the medium term are thus rather different from those which gave rise to the import boom of the late 1970s. In particular, the growth of consumption will be much lower than that experienced in the late 1970s. As a result of these factors we expect the volume of imports to grow quite rapidly in the years 1989 to 1992, as shown in Table 3.8. This highlights the fact that, while we see the industrial sector as being the major factor in the recovery of the economy in the medium term, it takes a big increase in the output of that sector to have a significant impact on the domestic economy.

## Net Factor Income

Over the last ten years the growth in outflows of factor income has had a serious impact on the development of the economy. The growth in this component of GNP knocked an average of 1.8 per cent a year off the growth rate over the six years 1980-86. This growth occurred in two of the three components of factor flows: national debt interest paid abroad and repatriation of profits. The reasons for the growth in the former are fairly obvious following, as they do, on a period of high government

borrowing from abroad, rising international real interest rates, and a falling effective value of the Irish pound.

The behaviour of profit repatriations is examined in some detail later (O'Malley and Scott, this *Review*) and is related to the high propensity of foreign firms located in Ireland to remit their profits to locations outside Ireland. On this basis, the benchmark projection assumes that 60 per cent of the increase in industrial profits is repatriated. As a result, the projected growth in the industrial sector in the medium term will lead to a continued increase in profit repatriations. Over the five year period they are projected to rise at over 13 per cent per annum. As discussed elsewhere, if the recovery projected for the early 1990s resulted in domestic industry growing more rapidly than in the first half of the 1980s, the growth in profit outflows could be somewhat lower than we have projected.

In the next five years we have assumed relatively little change in world interest rates and no change in exchange rates. As a result, the major factor driving national debt interest paid abroad will be future developents in government foreign borrowing. The likely time profile for this aspect of the financing of the government's borrowing requirement is dealt with later, and involves a gradual phasing out of foreign borrowing by 1992. Consequently, the national debt interest paid abroad falls each year from 1989 to 1992 (see Table 3.9).

**TABLE 3.9: Balance of Payments (£m)**

| | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|---|
| Goods | | | | | | | | | | |
| Exports | 6813 | 8695 | 9526 | 9176 | 10130 | 10940 | 12135 | 13468 | 14959 | 16574 |
| Imports | 7334 | 8893 | 9374 | 8614 | 9025 | 9514 | 10432 | 11478 | 12686 | 13940 |
| Balance | −521 | −198 | 153 | 562 | 1105 | 1425 | 1702 | 1989 | 2273 | 2635 |
| Services | | | | | | | | | | |
| Exports | 939 | 1074 | 1214 | 1159 | 1312 | 1421 | 1549 | 1687 | 1833 | 1981 |
| Imports | 830 | 924 | 975 | 1092 | 1237 | 1337 | 1444 | 1554 | 1670 | 1790 |
| Balance | 109 | 150 | 239 | 68 | 75 | 84 | 104 | 133 | 163 | 191 |
| Balance of Trade | −412 | −48 | 392 | 629 | 1180 | 1509 | 1807 | 2123 | 2436 | 2825 |
| as % of GNP | −3.1 | −0.3 | 2.6 | 3.9 | 6.8 | 8.5 | 9.7 | 10.6 | 11.3 | 12.2 |
| Net EEC Transfers | 524 | 662 | 900 | 893 | 728 | 857 | 883 | 909 | 936 | 965 |
| Total Net International | | | | | | | | | | |
| Transfers | 671 | 818 | 1050 | 1075 | 924 | 1025 | 1053 | 1068 | 1085 | 1103 |
| Factor Income Flows | | | | | | | | | | |
| Nat. Debt Interest(−) | 579 | 701 | 795 | 761 | 821 | 858 | 850 | 850 | 846 | 797 |
| Profits etc. Outflow(−) | 659 | 983 | 1321 | 1346 | 1413 | 1652 | 1880 | 2141 | 2384 | 2649 |
| Other Factor Income | 54 | 24 | 124 | 75 | 80 | 113 | 153 | 196 | 246 | 304 |
| Net Factor Income | −1184 | −1660 | −1992 | −2032 | −2154 | −2396 | −2577 | −2794 | −2983 | −3142 |
| Current Account Balance | −925 | −889 | −550 | −328 | −50 | 138 | 283 | 396 | 538 | 786 |
| as % of GNP | −6.8 | −6.1 | −3.6 | −2.0 | −0.3 | 0.8 | 1.5 | 2.0 | 2.5 | 3.4 |
| Capital Account of which: | | | | | | | | | | |
| Government For. Borr. | 811 | 717 | 1061 | 785 | 727 | 295 | 215 | 165 | 114 | −62 |
| Private Capital Outflow | 473 | 356 | 719 | 649 | 843 | 607 | 805 | 946 | 1096 | 1152 |

Given the likely time path of government foreign borrowing, which is discussed later, and given the projection for the current balance of payments, the level of private capital outflows is residually determined. As outlined later, we have assumed that these will continue at a relatively high level up to and including 1992. In investing abroad the private sector is expressing the view that they can obtain a higher rate of return on foreign investments than they can on domestic investments. Provided that they are correct in their expectations, one would expect this foreign investment to generate a future current inflow of dividends and interest income.

Whether this inflow will in fact be measured by the CSO and the Central Bank in their balance of payments figures remains a moot point. It may well be the case that a new 'white hole' may appear where these factor inflows are not recorded. The current practice involves treatment of such interest and dividends on an actual payments rather than on an accruals basis. If this practice is continued much will depend on the nature of the investments whether the profits and interest earned abroad actually show up in the accounts. Returns to Irish investors through capital gains may not be remitted whereas profits and dividends are normally paid as they accrue. Whatever the accounting procedure used, the growth in such income will represent a real increase in national welfare.

Whether recorded or not, we have included an estimate for such an inflow of profits and interest in our benchmark projection. We have made a very conservative assumption concerning the rate of return on these foreign investments setting it at around 5 per cent, below that paid by the government on foreign borrowing and well below our assumed yield on investment in domestic government debt in the medium term. As a result, other factor income is assumed to grow by over £30 million in 1988 rising to nearly £60 million in 1992.

Any change in the pattern of financing of the government borrowing requirement may affect the flow of national debt interest. However, on the assumptions set out above, it will have little effect on the balance of payments unless other aspects of the benchmark projection are varied. This is due to the fact that any increase in foreign financing by the government would be exactly offset by a change in the private capital flow. With the rates of return (interest) on these two capital transactions being reasonably close, any flows of foreign interest payments generated by increased public foreign borrowing would be substantially offset by the flow of profits and interest generated by the increased private capital outflow invested abroad.

## GDP and GNP

The rate of growth of the economy in the medium-term is determined by the growth of output. The growth of expenditure is then determined as a function of domestic incomes and the investment required to meet the needs of the productive sector. (As is the case with most other countries, due to data problems, the national accounts prepared by the CSO show different growth rates on an expenditure and an output basis in spite of the fact that these two aggregates should, on theoretical grounds, be identical.)

The projected growth path for net factor income will result in a reversal in the situation over the late 1970s and the 1980s where the growth of GNP was always less than the growth of GDP. By 1992 the projected reduction in the rate of growth of factor outflows will actually contribute to the growth of GNP (Table 3.8). In that year the rate of growth in GNP will exceed that of GDP by 0.2 percentage points, a very different situation from the early 1980s where it was reducing the growth

of GNP by almost 2 per cent a year. As a result, our benchmark projection shows an average growth rate of 3.5 per cent is GDP and 3.4 per cent in GNP over the four years 1989-92.

## 3.5 BALANCE OF PAYMENTS

EEC transfers are projected to grow at the rate of world inflation from 1989 to 1992 (Table 3.9). (The figures for 1987 and 1988 are affected by delays in payment of the cost of intervention.) Depending on how the CAP is changed and on likely new measures for completing the internal (EEC) market, this projection may have to be altered. Private transfers, which also come largely from the EEC, are projected to grow at roughly the same rate as the other international transfers.

When taken together with the projected trend in the other components of the current balance of payments, shown in Table 3.9, the result is a small surplus in 1988 for the first time since the 1960s. This surplus is expected to grow steadily over the period to 1992 at a rate of around 0.5 per cent of GNP a year. By 1992 the balance of payments surplus is projected to be 3.5 per cent of GNP and growing.

The continuing high personal savings ratio, combined with the action taken to deal with the public finance problem, is the major factor in bringing the current account of the balance of payments into surplus. For a number of years the balance of trade has been favourable but, unitl now, it has been more than offset by the outflow of factor income. The increasing current account suplus over the next five years will result from the fact that the growth of the economy will be led by the projected increase in industrial exports, with the public finances playing either a deflationary or a neutral role.

If capital outflows were not possible, so that adjustment had to take place through the current account of the balance of payments, such a surplus would generate countervailing forces which would eventually eliminate it. However, our projection shows the surplus rising continuously to 1992. This highlights one of the major areas of uncertainly concerning the future evolution of the economy. In theoretical models the chief mechanism for preventing the development of such a current account surplus when capital account flows are not possible is a change in domestic interest rates; the increased supply of domestic funds due to the surplus would drive down interest rates. This would, in turn, result in increased domestic activity generating more imports and eventually eliminating the surplus.

In the case of the Irish economy there is considerable uncertainty on both the sensitivity of domestic economic activity to interest rate changes and on the extent to which domestic interest rates can vary independently of world interest rates. In the early 1980s the ready availability of funds from abroad prevented such a self-correcting mechanism from dealing with our mushrooming balance of payments problem. It took some time before the cumulative deficits brought about a rise in domestic interest rates. Even then the rise had more to do with external factors than the size of our current balance of payments deficit. Because of the uncertainty as to how the economy will react to these changes in the future we consider this issue in more detail in Section 4 of this *Review*.

For our benchmark projection we have, as discussed in more detail elsewhere, assumed that there is scope for a limited fall in domestic interest rates, even with world rates remaining relatively fixed. By 1992 they will be only 1.5 or 2 per centage points above German rates. As the real economy responds to this fall in domestic rates, we have allowed some limited substitution of capital for labour due to the lower cost of capital, and an increase in housing investment. However, the effects could be greater than we have allowed for and domestic savings/consumption may also prove responsive to a fall in interest rates. These matters are taken up in Section 4. As it stands there would appear to be little scope for a further fall in domestic interest rates at the end of the projection period unless world real interest rates were to fall. Without an additional response from the domestic private sector to the fall in interest rates achieved by 1992 this would imply continued growth of the current account surplus into the 1990s.

The capital account of the balance of payments is shown in Table 3.9. This shows the counterpart to the improvement in the current account to be a continuing private capital outflow. By 1992 it will amount to well over £1,100 million a year. This outflow would reflect the view of the private sector that they could obtain higher returns from investment abroad than from increased investment at home. Unless the rates of return on foreign investment (foreign real interest rates) were to fall further than we have assumed for 1992 this outflow could continue well into the 1990s.

This growing balance of payments surplus reflects a personal savings rate in Ireland which is extremely high by international standards. It has mainly been the offsetting high level of borrowing by the government sector that has kept the current account of the balance of payments in deficit throughout the 1980s. With the public finances coming under control in the medium term we see a new situation developing, a situation which, because of its novelty, is difficult to project accurately. However, it could be crucial to the longer-term development of the Irish economy.

## 3.6: EMPLOYMENT AND UNEMPLOYMENT

In using the Medium-term Model to examine the evolution of the Irish economy up to 1992 we have relied on other information to predict the growth in labour supply. The structural changes in the Irish labour market over the past 25 years make it difficult to develop reliable equations for labour supply using econometric methods. Instead, we have had to use our judgement, based on data for the 1980s, to project the factors affecting labour supply up to 1992. On this basis we have assumed a rise in emigration to a peak of 35,000 in 1988, due to the increase in unemployment in that year. With some improvement in the unemployment figures in later years we have assumed

## TABLE 3.10: Employment and Unemployment          Thousands

| | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|---|
| Agriculture | 189 | 181 | 171 | 168 | 163 | 158 | 154 | 150 | 146 | 141 |
| Industry | 331 | 319 | 306 | 301 | 294 | 291 | 297 | 305 | 310 | 313 |
| Market Services | 392 | 391 | 392 | 397 | 403 | 406 | 410 | 415 | 421 | 426 |
| Health + Education | 139 | 139 | 137 | 137 | 129 | 122 | 120 | 120 | 120 | 120 |
| Public Admin. + Defence | 73 | 73 | 73 | 72 | 71 | 68 | 67 | 67 | 67 | 67 |
| Total Employment | 1124 | 1103 | 1079 | 1075 | 1060 | 1045 | 1048 | 1057 | 1063 | 1067 |
| Unemployment Rate (%) | 14.0 | 15.6 | 17.3 | 17.4 | 18.5 | 19.5 | 19.1 | 18.5 | 18.2 | 18.3 |
| Unemployment | 183 | 204 | 226 | 227 | 240 | 253 | 248 | 240 | 237 | 238 |
| Net Migration | 14 | 9 | 20 | 31 | 25 | 35 | 30 | 26 | 23 | 20 |
| Labour Force | 1307 | 1307. | 1305 | 1302 | 1300 | 1298 | 1295 | 1297 | 1300 | 1305 |

that emigration will fall back to 20,000 by 1992. However, due to the serious data problems in this area the eventual outturn could well show significant differences from this projection (see Table 3.10).

In addition to the projected trend of emigration the labour force will be affected by changes in the participation rate. As discussed in Section 2 we have assumed some further fall in participation rates over the period. However, the return to moderate employment growth in the 1990s could alter this pattern. The net result of these assumptions is that the labour force is projected to fall to a low point in 1989 and to show a slow rise in the following three years.

When taken together with our projections for sectoral employment, which we have presented earlier, these trends in the supply (labour force) and demand (employment) for labour generate a projection for unemployment over the five year period. We show a very substantial increase in unemployment in 1988 arising from the cutbacks in the public sector. The rate of unemployment falls slowly from this peak in the following three years and stabilises in 1992 due to the effects of adverse movements in wage costs on employment growth. On this basis the unemployment rate in 1992 will be just below the current 1987 level. The continuation of the current high unemployment rate helps explain our projection of a continuing high level of emigration. As discussed later in Section 4, if domestic costs were to rise less rapidly in the early 1990s this situation might be altered with a more favourable development of employment in the domestic private sector.

### 3.7: THE PUBLIC FINANCES

In Section 2 we discussed our assumptions for the public finances over the five year period to 1992. The numbers employed in the public sector are projected to fall substantially in 1988 with a further fall in 1989 due to the carryover effects of decisions taken in the Estimates for 1988. There is assumed to be no change in the level of public employment in the 1990s from the 1989 level. The development of the pay bill is distorted

due to the inclusion of the costs of redundancy and early retirement in this item of expenditure. The assumptions concerning pay rates have already been spelt out in Section 2. The net result of these different assumptions is that public consumption (largely pay and superannuation) actually falls in 1988. In the following four years the rate of growth remains well below that of GNP.

As shown in Table 3.11, the rise in national debt interest, which was so rapid in the early 1980s, slows with the reduction in borrowing as a percentage of GNP (and as a percentage of the debt outstanding). The fall in domestic interest rates and small fall in foreign interest rates also have a significant, though lagged, effect. Other transfer payments, largely social welfare payments, rise roughly in line with the rate of inflation. In 1988 the growth in the cost of unemployment payments is largely offset by the fall in the cost of education transfers. After 1988 the fall in the numbers unemployed helps reduce the cost of this item of expenditure. Due to the indexation assumption, subsidies after 1988 grow in line with the growth of consumption, somewhat slower than the growth in the value of GNP. There is a substantial cutback in the volume of the Public Capital Programme in 1988. This affects all items, including public housing. As seen earlier, this has a strong impact on overall building investment in the economy in 1988. Capital expenditure by public authorities is assumed to show no volume change after 1988. This involves the replacement, on completion, of certain investment projects in the education and health areas with new projects.

In spite of the assumption of the indexation of tax rates and bands there is still some upward drift in tax revenue. In the case of indirect taxes this occurs because of the combined effects of a slow but steady increase in the volume of consumption and because of the higher income elasticity for certain items with a high tax content (e.g., cars). Revenue from direct taxation benefits from the increase in numbers in non-agricultural employment from 1989 onwards. In the case of the DIRT tax we have assumed some fall in

revenue in the medium term due to the fall in rates of interest. Special factors affect the growth of government trading and investment income in 1988. After adjustment in 1989, it is assumed to grow at a steady pace to 1992.

While we have used the national accounting classification for the government accounts, the trend in public authorities' savings shown in Table 3.11 is a good indication of movements in the current budget deficit. The public authorities' borrowing requirement, shown in Table 3.11, is generally also a good indicator of the exchequer borrowing requirement. The exception to this rule is discussed further below.

When all these developments are taken into account we project that the current budget deficit (public authorities' savings in Table 3.11) will fall in 1988 by about 0.1 per cent of GNP, while the public authorities' borrowing requirement (close to the exchequer borrowing requirement) will fall by about 2.5 per cent of GNP. The small fall in the budget deficit as a percentage of GNP reflects the fact that the cuts in public service numbers have a high initial cost and that the cuts themselves, through affecting the general level of activity in the economy, will reduce revenue. The cut in the borrowing requirement in 1988 is exaggerated due to the inclusion in the figures for 1987 of a loan to the intervention agency to make up for the delay in payments by the EEC. This item is normally excluded from the financial accounts definition of the exchequer borrowing requirement.

From 1989 onwards both the current budget deficit and the borrowing requirement are projected to decline every year to 1992, both in absolute terms and as a percentage of GNP. The improvement takes place almost entirely due to the reduction in the current budget deficit (increase in public authorities' savings). This stems from the growth in revenue arising from the growth of the economy over the years 1989 to 1992; with expenditure held constant in real terms the borrowing falls. This, in turn, has a cumulative effect on debt interest as discussed above. However, the borrowing requirement in 1990 will, at 8.2 per cent of GNP, be above the government's target for that year.

This highlights the fact that it takes time for remedial action on the public finances to bear fruit. The initial impact of cutbacks is to reduce GNP and the overall level of activity with consequential offsetting effects on revenue buoyancy and expenditure on transfers. However, the economy, especially wage rates, will adjust slowly to the changed circumstances and it takes time for some recovery to occur in the private sector. This pattern of development means that action to remedy the public finances must be viewed in a medium-term context if its full effects are to be understood.

The debt/GNP ratio is shown in Table 3.12. The slow speed of adjustment of the economy to the measures taken to remedy the public finances is even more apparent in the behaviour of this ratio than for the budget deficit or the borrowing requirement. The ratio only turns down in 1990 in spite of the major reduction in the borrowing requirement in 1988. This turnaround

in the ratio is in line with Government objectives. The delayed reaction of the debt ratio is due to the fact that the percentage change in GNP resulting from any cutbacks is, initially, greater than the change in the very large debt. It is only as the value of GNP recovers from the initial effects of the cutbacks that the ratio begins to fall. However, the continuing fall in the borrowing requirement over the four years 1989-1992, combined with the continuing high real rate of interest, means that the fall in the debt/GNP ratio would accelerate after 1992 as a result of the remedial action taken on the public finances in the late 1980s. This highlights the long timescale needed to bring the public finances back into control due to the very high level of the existing debt.

## 3.8: FLOW OF FUNDS

The flow of funds between different sectors is a very useful indicator of what is happening in the economy. Until recently relatively little attention has been given by economic forecasters in Ireland to these accounts. (Exceptions are Dowling, 1973; Honohan, 1982; and O'Connell, 1986.) In the macro economic model which we have used to prepare this benchmark projection the pattern of flows of funds between the private and public sector is crucial in determining the structure of the financing of the government borrowing requirement. This borrowing is determined simultaneously with the determination of the overall level of economic activity.

In Table 3.12 we show the projection for the flow of funds in the economy. As can be seen from this table the company sector, in spite of the fall off in activity, has remained a substantial net borrower in recent years. From 1988 onwards, the growth in private investment will be much greater than the growth in company savings so that the company sector's borrowing (net acquisition of financial funds with opposite sign to that in Table 3.12) rises rapidly. However, due to the projected low level of personal sector investment (housing and agricultural investment) the personal sector will continue to have very substantial funds available to lend to other sectors.

When the private sector is taken as a whole, the funds available (net acquisitions) shows some fall over the period. With the decline in the absolute volume of funds taken up by the Public Authorities, due to the improvement in the public finances, the domestic private sector will be able to fund an increasing share of this borrowing. In this projection we have assumed that the share of the private sector's spare funds going to the government falls from around 84 per cent in 1986 to just under 75 per cent in 1992.

As can be seen from Table 3.12, this means that the foreign borrowing by the Exchequer is eliminated by 1992. (In fact there is a small net repayment of debt in that year.) Given that the private sector only lends a maximum of 75 per cent of its spare funds to the public sector this implies a continuing substantial private capital outflow as shown in Table 3.9. The uncertainty concerning this item and the allocation of private sector funds is discussed in more detail in Section 4.

## TABLE 3.11: Public Authority Accounts (£m)

| | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|---|
| Current Receipts | | | | | | | | | | |
| Taxes on Income and Wealth. | 2886 | 3340 | 3553 | 3919 | 4287 | 4408 | 4635 | 5021 | 5457 | 5888 |
| Company | 222 | 217 | 226 | 295 | 287 | 304 | 314 | 342 | 367 | 392 |
| Personal | 2664 | 3123 | 3328 | 3624 | 4000 | 4105 | 4321 | 4679 | 5089 | 5496 |
| Taxes on Expenditure | 2580 | 2874 | 3010 | 3165 | 3302 | 3387 | 3558 | 3768 | 4024 | 4286 |
| Gross | 2777 | 3081 | 3236 | 3415 | 3569 | 3687 | 3867 | 4086 | 4352 | 4624 |
| EEC Budget Contrib.(−) | 196 | 207 | 225 | 250 | 267 | 300 | 309 | 318 | 328 | 338 |
| Net Trading + Inv. Income | 440 | 477 | 549 | 445 | 505 | 418 | 452 | 467 | 485 | 504 |
| Transfers From Abroad | 121 | 67 | 85 | 99 | 97 | 97 | 100 | 103 | 106 | 109 |
| Total Current Receipts | 6029 | 6759 | 7198 | 7628 | 8192 | 8311 | 8746 | 9359 | 10072 | 10787 |
| Current Expenditure | | | | | | | | | | |
| Subsidies | 551 | 556 | 582 | 570 | 563 | 545 | 574 | 605 | 641 | 677 |
| National Debt Interest | 1374 | 1543 | 1824 | 1842 | 1975 | 2078 | 2203 | 2342 | 2436 | 2446 |
| Other Transfer Payments | 2405 | 2657 | 2938 | 3170 | 3318 | 3410 | 3492 | 3604 | 3746 | 3908 |
| Public Consumption | 2889 | 3081 | 3242 | 3513 | 3666 | 3629 | 3728 | 3879 | 4152 | 4433 |
| Total Current Expenditure | 7219 | 7837 | 8586 | 9096 | 9522 | 9661 | 9996 | 10430 | 10976 | 11465 |
| Public Auth. Savings (net). | −1190 | −1078 | −1389 | −1468 | −1330 | −1351 | −1251 | −1071 | −904 | −678 |
| (as % of GNP) | −8.8 | −7.4 | −9.1 | −9.1 | −7.7 | −7.6 | −6.7 | −5.4 | −4.2 | −2.9 |
| Capital Receipts | 287 | 316 | 411 | 360 | 418 | 431 | 442 | 457 | 475 | 493 |
| Capital Expenditure | 1192 | 1186 | 1282 | 1225 | 1377 | 992 | 979 | 1020 | 1071 | 1122 |
| Borr. for Capital Purposes. | −905 | −870 | −871 | −866 | −959 | −561 | −537 | −564 | −596 | −629 |
| Total Borrowing | 2094 | 1948 | 2260 | 2333 | 2289 | 1912 | 1787 | 1635 | 1500 | 1307 |
| (as % of GNP) | 15.5 | 13.3 | 14.7 | 14.4 | 13.3 | 10.8 | 9.6 | 8.2 | 7.0 | 5.6 |

## TABLE 3.12: Flow-of-Funds Analysis (£m)

| | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|---|---|---|---|
| Company Sector | | | | | | | | | | |
| Sources of Funds | 1602 | 1552 | 1698 | 1692 | 1954 | 1795 | 1920 | 2037 | 2177 | 2330 |
| Uses of Funds | 1856 | 2113 | 1970 | 1924 | 2026 | 2142 | 2360 | 2669 | 3005 | 3316 |
| Net Acquisitions | -254 | -561 | -272 | -231 | -71 | -347 | -440 | -631 | -827 | -986 |
| Net Acquisition Ratio (%) | -15.9 | -36.1 | -16.0 | -13.7 | -3.7 | -19.4 | -22.9 | -31.0 | -38.0 | -42.3 |
| Household Sector | | | | | | | | | | |
| Sources of Funds | 2418 | 2561 | 2680 | 2822 | 3088 | 3072 | 3212 | 3424 | 3697 | 3962 |
| Uses of Funds | 885 | 933 | 882 | 807 | 833 | 865 | 906 | 981 | 1070 | 1142 |
| Net Acquisitions | 1532 | 1628 | 1799 | 2015 | 2255 | 2207 | 2306 | 2443 | 2627 | 2820 |
| Net Acquisition Ratio (%) | 63.4 | 63.6 | 67.1 | 71.4 | 73.0 | 71.9 | 71.8 | 71.3 | 71.1 | 71.2 |
| Company + Household Sector | | | | | | | | | | |
| Sources of Funds | 4020 | 4114 | 4378 | 4514 | 5042 | 4867 | 5132 | 5461 | 5874 | 6292 |
| Uses of Funds | 2742 | 3046 | 2851 | 2730 | 2859 | 3007 | 3266 | 3650 | 4075 | 4459 |
| Net Acquisitions | 1278 | 1067 | 1526 | 1784 | 2183 | 1860 | 1866 | 1811 | 1800 | 1834 |
| Net Acquisition Ratio (%) | 31.8 | 25.9 | 34.9 | 39.5 | 43.3 | 38.2 | 36.4 | 33.2 | 30.6 | 29.1 |
| Net Acquisitions lent to | | | | | | | | | | |
| Government (%) | 101.1 | 103.6 | 82.1 | 83.8 | 72.2 | 86.9 | 84.2 | 81.2 | 77.0 | 74.7 |
| Public Authorities' | | | | | | | | | | |
| Borrowing Requirment | 2094 | 1948 | 2260 | 2333 | 2289 | 1912 | 1787 | 1635 | 1500 | 1307 |
| Domestic Financing | | | | | | | | | | |
| excluding Central Bank | 1292 | 1105 | 1254 | 1495 | 1577 | 1617 | 1572 | 1470 | 1386 | 1369 |
| Foreign Borrowing | 811 | 717 | 1061 | 785 | 727 | 295 | 215 | 165 | 114 | -62 |
| Debt Ratios | | | | | | | | | | |
| Debt/GNP Ratio | | | | | | | | | | |
| Total (% of GNP) | 107.9 | 119.6 | 133.0 | 143.9 | 155.6 | 162.7 | 163.5 | 155.7 | 150.2 | 147.3 |
| Foreign (% of GNP) | 50.5 | 54.6 | 57.5 | 59.0 | 60.9 | 61.0 | 58.9 | 56.0 | 52.4 | 48.4 |

## 3.9: SUMMARY

The outlook for the Irish economy presented in this *Review* is for a return to a growth rate of around 3.5 per cent by the early 1990s. If realised, this would represent a major turnaround from the dismal experience of the 1980s. The differences between this picture and that painted in the last ESRI *Medium-term Outlook*, published at the beginning of 1986, are more concerned with the timing of the recovery than with its size or character.

The industrial sector initiates the pattern of resumed growth with output growth above 5 per cent for the period 1989-92 and a recovery of investment accompanied by a more modest recovery of employment. It is sobering to reflect that, even with such a recovery, industrial employment is still projected to be lower in 1992 than in 1984 (313 thousand as against 319 thousand). Labour productivity will be growing at more modest rates than in the recent past when newly installed industries of a particular kind distorted the figures (i.e., certain chemical and drink concentrates where fixed investment and numbers employed were modest, but where added-value and profit repatriations were enormous). The profit rate in industry, which has been steadily rising since 1984, will remain at a high level out to 1990, and then show a small decline to 1992 as wages begin to rise towards the end of the projection period. In 1992 it will still be well above the levels experienced up to the mid-1980s.

Growth in marketed services will suffer badly as an indirect result of the public expenditure cuts in 1988. However, recovery from the rate of just under 2 per cent in 1988 will occur in 1989, and will average around 3.75 per cent out to 1992. Investment growth, which of course includes building and construction as well as machinery and equipment, will be boosted by individual large-scale projects as well as by the general recovery in growth. The magnitude of the projected employment growth is more uncertain. Massive structural change is under way in certain areas of this sector due to recent developments in computer, information and telecommunication technology, where the tendency has been for labour shedding. There has been much innovation in this sector, with expansion in the entertainment, leisure, catering and media areas, and with the imminent prospect of expansion in the broadcasting field. The sector has shown a steady tendency to grow over the past decade and to be somewhat impervious to the cycles that affect the industrial sector. We project aggregate employment to rise by 3,000 in 1988 increasing to over 4,000 per annum subsequently.

The agricultural sector, while showing a small fall in aggregate output, will have rising *per capita* incomes due to the secular decline in numbers in farming.

Finally, the proposed cuts in expenditure and numbers employed in the public sector dominate the picture for 1988, with carryover into 1989. From then out to 1992, we assume that services and employment will be maintained at the 1989 level. The evolution of wage costs in the public sector will be governed by the terms of the recent pay agreement out to 1990. Beyond that, we assume that public sector wage costs will move in line with those in the private sector.

The return to a 3.5 per cent growth rate of the economy in the 1990s continues the improvement in the public finances which we see occurring as a result of the 1988 expenditure cuts. The growth leads to revenue buoyancy in the 1990s while also raising the value of GNP. The simultaneous effect of these two changes is to bring about a significant reduction in the public authorities borrowing requirement (from a level of 14.4 per cent of GNP in 1986 to 5.6 per cent of GNP in 1992). Borrowing for current purposes will fall from 9.1 per cent of GNP in 1986 to just under 3 per cent by 1992, while the total debt/GNP ratio will stabilise by 1989 and begin to fall in 1990. By 1992 it will be below the current 1987 level and, in subsequent years, the decline in the ratio would be even more rapid if these trends were to continue.

The year 1985 was the first year that the balance of trade moved into surplus. This trend continued in 1986-87, and is expected to accelerate out to 1992, where it is projected to reach over 12 per cent of GNP. However, profit repatriation outflows will also continue to run at a high level if recent behaviour by multi-national companies based in Ireland continues unchanged. This element, when combined with gradually declining foreign debt payments and increasing residual factor income inflows, will result in a current account surplus rising from essentially zero in 1987 to nearly 3.5 per cent of GNP by 1992.

While our benchmark projection shows the public finances coming under control by the early 1990s and a growth rate closer to the experience of the 1960s and 1970s, the economy will still be faced with a very serious unemployment and emigration problem. The rate of unemployment rises sharply in 1988 as a result of the public sector cuts, to 19.5 per cent of the labour force. This rise could be greater to the extent that numbers emigrating are lower than the 35,000 assumed for 1988. With the assumed cessation of public employment cuts by 1989, and with gradually increasing employment in industry and marketed services, both the unemployment rate and numbers emigrating begin to fall. However, by 1992, the rate of unemployment is still only slightly lower than it is in 1987.

The growth in the economy and the growth in personal disposable income and consumption will be satisfactory for those who are in employment in 1992. However, the position of those who do not have jobs will be unchanged. This highlights the fact that when growth is accompanied by a reversal of factor income flows the result may be a significant change in the distribution of income. Those who have been able to build up savings will do especially well out of the turn-around in the economy.

# SECTION 4

# EXTERNAL AND DOMESTIC VARIATIONS TO THE BENCHMARK ASSUMPTIONS

## 4.1 : INTRODUCTION

In Section 2 we presented our baseline assumptions regarding the evolution of certain key world variables (world real growth, energy and other import prices, interest rates, exchange rates, etc.), and the stance of domestic fiscal policy.

As with any economic projection there are many factors which give rise to uncertainty concerning the likely outturn. For example, a major world depression, sparked off by whatever unpredictable chain of events, could totally invalidate our assumptions concerning world growth. A massive and unexpected devaluation of the US dollar could invalidate our assumptions about world inflation. While we are unable to rule out such cataclysmic events with absolute certainty, nevertheless it does not seem useful to explore them in the context of our five-year economic forecasts. What we can do is to examine what might be the consequences of making moderate changes to some of the key assumptions which underpin our benchmark forecast. In using the computer model to explore the sensitivity of the benchmark to changes in different assumptions we can ensure that the analysis has an explicit and consistent framework. However, too big a change would run the risk of invalidating the model whose structure is assumed to be unchanged into the future. Indeed, in interpreting the variant results we are often made painfully aware of limitations in the model's structure and level of sectoral disaggregation.

What are the aspects of the benchmark which one would like to explore? The primary importance given to the industrial sector in our analysis suggests that the sensitivity of our forecast to the world growth assumption should be examined. In Section 4.2, therefore, we look at the consequences of a more pessimistic view of future world growth. The importance of the public sector expenditure . cuts, and of their declared aim of restoring stability to the public finances, suggests that we should also examine the alternative where no such cuts are made, in order to discover their effects on the economy. This is done in Section 4.3. In Section 4.4 we examine some variants in the evolution of wages in the public and private sectors including a public sector 'pay freeze' over the period 1988-1990 and a variant where wage levels in both public and private sectors are 'fixed' at a value which is one per cent below the benchmark outcome for the entire 1988-92 period. In Section 4.5 we examine the impact on the benchmark projection of a cut in the rate of direct tax as against the benchmark assumption of a fully indexed direct tax system. In Section 4.6 we examine the consequences of lower world inflation and interest rate assumptions.

Finally, in Sections 4.7 to 4.11 we examine how the benchmark projection would be affected by a different evolution of certain key financial variables over time. Because of the relative paucity of published empirical evidence on these aspects of economic behaviour in Ireland, very great uncertainty attaches to such analysis. Our results, more qualitative than the previous variants, are designed to raise questions rather than provide definitive answers.

The methodology adopted in examining the effects of varying the benchmark assumptions is as follows. The benchmark projection uses specific values of world and domestic policy variables, details of which have been given in Section 2. In each of the variants presented below, we modify one or more of the assumptions from their benchmark values and use the model to produce a revised projection. Except for those alterations specifically detailed, the assumptions underlying the variant projections are identical to those which underlie the benchmark. The variants to the benchmark projection assumptions which we have examined are summarised in Table 4.1. What is of interest is to examine the ways in which the variant projection differs from the benchmark projection and this is done by calculating the absolute differences and/or the percentage differences between the two projections. The detailed comparisons are presented in the subsequent sections in a series of sets of graphs, each set using the group of variables detailed in Table 4.2 . In Figure 4.1 we show the actual benchmark projection for the same set of variables.

Finally, in the following sections all numerical results are expressed in terms of how the variant projection differs from the benchmark. So, for example, if we say that industrial employment has 'risen' by 6,000 in a particular variant, we will always mean that it has risen by 6,000 relative to the benchmark, i.e., relative to the projection result presented and discussed in the tables accompanying Section 3. In any case where we wish to refer explicitly to the actual benchmark or variant projection numbers, this will be indicated very clearly. Using this convention will permit a briefer presentation of the results. Note also that the public authorities' borrowing requirement (shown in graph number 11 of each figure) is presented as a negative number, so that a falling graph implies a movement towards continually more borrowing than in the benchmark.

**TABLE 4.1: Tabulation of Variations on the Benchmark Assumptions**

| Section | Description | Public Sector Pay | Private Sector Pay | Public Sector Employment | Public Non-Pay Expenditure | Direct Taxes | World Growth | World Prices | Interest Rates | Profit Repatriation |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | Benchmark | Fixed by Pay Agreement 88-90 Linked to Industry 91-92 | Bargaining 88-92 | Cuts in 88/89 Fixed after 1989 | Cuts in 88 Indexed 89-92 | Indexed | Benchmark | Benchmark | Benchmark | 51-60% of Industrial Profits for 1988-92 |
| 4.2 | Lower World Growth | ditto | ditto | ditto | ditto | ditto | Lower Growth | ditto | ditto | ditto |
| 4.3 | Policy Indexation | ditto | ditto | Fixed at 87 level | Indexed from end 1987 | ditto | Benchmark | ditto | ditto | ditto |
| 4.4 | Public Sector Pay Freeze | Frozen 88-90 Linked to Industry 91-92 | ditto | Fixed at 87 level | Cuts in 88 Indexed 89-92 | ditto | ditto | ditto | ditto | ditto |
| 4.4 | Economy-Wide Pay Cut | Fixed at 1% below benchmark for 1988-92 | Fixed at 1% below benchmark for 1988-92 | Cuts in 88/89 Fixed after 1989 | Cuts in 88 Index 89-92 | ditto | ditto | ditto | ditto | Lower rate of profit repatriation |
| 4.5 | Direct Tax Cut | Fixed by Pay Agreement 88-90 Linked to Industry 91-92 | Bargaining 88-92 | ditto | ditto | Tax Cut | ditto | ditto | ditto | 51-60% of industrial profits for 1988-92 |
| 4.6 | Lower World Inflation | ditto | ditto | ditto | ditto | Indexed | ditto | Down by 1 percentage point per annum | Cut by 1 percentage point | ditto |

## 4.2 : SLOWER WORLD GROWTH

A key assumption in the benchmark forecast is the projection of industrial growth rates in six of the major OECD economies — Germany, France, Italy, the United Kingdom, The United States and Japan. The detailed assumptions, based on the latest IMF forecasts, are shown in Table 4.3, together with a weighted average figure (using the EC 'double-export' weights mentioned in Section 2 above). By the standards of the pre-1973 era these are not high growth rates. However, in relation to the recent past they represent a sustained if modest real growth which is consistent with our assumptions concerning the evolution of world prices, exchange rates and interest rates.

It is always possible that such a projection of moderate steady growth might prove too sanguine. The recent sharp fall in the price of equities adds urgency to the need for re-examination of world growth assumptions in the light of a more pessimistic view and, to some extent, our benchmark assumptions already incorporate these downward revisions of growth prospects. However, the recent stock market decline could, on past experience, be an early indicator of an impending recession. If it persists, the reduction in the 'paper' wealth of stockholders is likely to induce some reduction of private consumption expenditure world-wide. On the supply side, the cost of equity finance will have risen and may cause lower real fixed capital formation. More intangibly, 'confidence' may have been shaken and a chain of self-fulfilling pessimism may become established. The anatomy of any unfolding world recession would be complex and would involve differential real growth rates between countries against a background of generally lower aggregate growth, changing exchange rates, falling commodity prices and (probably) lower real interest rates. For Ireland, a fall in world growth would have an immediate, tangible and enduring impact in terms of a decline in direct investment by both multinational companies and domestic firms, with a subsequent reduction in industrial capacity, employment and exports. The other attributes of world recession could have indirect effects, some of which would operate through lower world growth. For simplicity we have examined the effects on the benchmark of lowering world growth, but leaving everything else unchanged. This may be a little pessimistic since accompanying lower world prices and interest rates could moderate the recessionary impact. The variant aggregate pattern of growth is shown below:

| | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|
| Benchmark : | 2.6 | 2.6 | 2.4 | 2.4 | 2.4 | 2.4 |
| Recession Variant : | 2.6 | 0 | 0 | 1.0 | 2.0 | 2.0 |

i.e., a cessation of aggregate world growth for 1988/89, followed by a gradual resumption in 1990/92. The results of the recession variant compared with the benchmark are shown in Figure 4.2.

The initial impact of this 'lower growth' variant is on the industrial sector. Output is down by 3.3 per cent by 1992, (remember, all figures are relative to the benchmark), with numbers employed down by 14,500.

**TABLE 4.2: Standard List of Variables Presented in Variant Graphs**

| Variable | Relation to Benchmark |
|---|---|
| 1(a) : Industrial Output | : Percentage deviation |
| 1(b) : Industrial Employment | : Percentage deviation |
| 2(a) : Marketed Services Output | : Percentage deviation |
| 2(b) : Marketed Services Employment | : Percentage deviation |
| 3(a) : GDP at Constant Factor Prices | : Percentage deviation |
| 3(b) : Total Employment | : Percentage deviation |
| 4(a) : GDP at Constant Market Prices | : Percentage deviation |
| 4(b) : GNP at Constant Market Prices | : Percentage deviation |
| 5 : Balance of Payments Surplus as Percent of GNP | : Absolute deviation |
| 6 : Real Personal Disposable Income | : Percentage deviation |
| 7 : Unemployment Rate as Per cent of Labour Force | : Absolute deviation |
| 8(a) : Real Private Consumption | : Percentage deviation |
| 8(b) : Real Total Investment | : Percentage deviation |
| 9(a) : Consumption Deflator | : Percentage deviation |
| 9(a) : Industrial Wage Rates | : Percentage deviation |
| 10(a) : Total Current Government Revenue (£million) | : Absolute deviation |
| 10(b) : Total Current Government Expenditure (£million) | : Absolute deviation |
| 11 : Public Authorities Total Surplus (same as negative of Borrowing Requirment | : Absolute deviation |
| 12 : Total Debt as Percentage of GNP (Debt/GNP Ratio) | : Absolute deviation |

**TABLE 4.3: World Economic Growth Projections**

| | Potential Output Growth (per cent) | | | | | |
|---|---|---|---|---|---|---|
| Country | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
| United States | 2.7 | 2.7 | 2.6 | 2.6 | 2.6 | 2.6 |
| Japan | 3.6 | 3.6 | 3.1 | 3.1 | 3.1 | 3.1 |
| France | 2.8 | 2.8 | 2.6 | 2.6 | 2.6 | 2.6 |
| West Germany | 2.6 | 2.6 | 2.2 | 2.2 | 2.2 | 2.2 |
| Italy | 2.6 | 2.6 | 2.5 | 2.5 | 2.5 | 2.5 |
| United Kingdom | 2.2 | 2.2 | 2.0 | 2.0 | 2.0 | 2.0 |
| Weighted Average | 2.6 | 2.6 | 2.4 | 2.4 | 2.4 | 2.4 |

The lags in the investment process are slower than for employment, so the industrial sector capital stock is down by 2.1 per cent by 1992. In the market services sector, employment is down by 8,800 by 1992, while in the public sector the job cuts have been implemented as in the benchmark. The effects on unemployment are severe: up by 10,100 in the initial year, 1988, and up by 23,200 by 1992, on the assumption, of course, that net emigration remains constant.

In this variant, public sector wages are determined by the national wage agreement for the years 1988-90. Operating through the wage bargaining process in the private sector, the high rise in unemployment drives down private sector wage settlements, so that by 1992 industrial wage rates are more than 10 per cent lower than the benchmark value. Since the lower growth is assumed to be world-wide, we do not allow this decline in wage rates (relative to the benchmark) and the consequential increase in Irish competitiveness, to increase Ireland's share of world output. In other countries labour markets will be operating in a similar fashion (i.e., other countries have Phillips curves as well as Ireland: Walsh (1987)). Hence, although industrial profitability rises relative to the benchmark, Irish

industrial capacity is simply reduced from the benchmark value by the fall in world growth, and then held fixed at this lower value.

Turning to the conventional targets of economic policy, the level of GDP is down by 1.9 points in 1992 while GNP is down by 4.8 points. Both the borrowing requirement rate and the balance of payments rate deteriorate ( by 3.7 points and 2.6 points in 1992, respectively), and the debt/GNP ratio rises dramatically by 26 points by 1992. The main deterioration in the public finances occurs in the years 1989-90, when a public sector wage agreement is in force which prevents any lowering of wage costs in the public sector. Clearly, in the event of the cessation of world real growth in 1988-89, the progress towards stability in the public finances shown in the benchmark would be altered. Relative to previous world recessions, the variant we have simulated is by no means severe. Hence, the extreme sensitivity of the benchmark projection to assumptions regarding world growth should be apparent. Indeed, if this variant included lower growth *and* cancellation of the public expenditure cuts, the public finances would be dangerously out of control by the end of the forecast period. Thus, the capacity of the government to adopt counter-cyclical measures to stimulate the economy in the event of a world recession is extremely limited.

**4.3 : EXPENDITURE CUTS OR EXPENDITURE INDEXATION?**

Once a large current deficit has been incurred, governments find it extremely difficult to close the gap even when prudence and sound economic principles dictate that they do so. The delay in restoring a sustainable balance to the public finances in Ireland has been well documented and the appropriate time horizon for

adjustment was the subject of investigation in the previous issue of the *Medium-Term Outlook*. The nature and extent of the cuts in current and capital expenditure presently under way and proposed for the next year have been discussed in Sections 2 and 3 above. Our benchmark forecast incorporates these cuts against the assumed evolution of the world economy and shows, in general terms, a picture of progressive restoration of balance to the public finances over the period 1988-1992.

An obvious question to ask is the following: what would be the outcome if no expenditure cuts and no public sector employment cuts were made in the 1988/89 period. In such a scenario all public expenditure instruments would be frozen in *real* 1987 terms and employment fixed at its 1987 level, with minor adjustments for carryover effects from the 1987 cuts already made. It is assumed that taxation remains indexed so that there is no offset to the increased expenditure. In this variant, no other changes are made to the benchmark assumptions, thus implying that the failure to adjust has no consequential effects, e.g., higher interest rates, a flight of capital, loss of confidence, etc. Consequently, this variant represents an overly optimistic estimate of what would be likely to happen in reality if adjustment to the public finances were postponed. The comparison between the benchmark (expenditure cuts) and the variant (expenditure indexation) is shown in Figure 4.3.

As expected, expenditure indexation causes a deterioration in the public finances when compared with the benchmark. The borrowing requirement rate rises in 1988 by 1.3 points relative to the benchmark and remains higher, the increase being 1.69 points by 1992. However, GNP growth has increased (initially by 1.45 points, and by 1.36 points in 1992). The debt/GNP ratio falls from 1988 (by a maximum of 4.7 points in 1990) but is back near its benchmark level by 1992 and is set to rise sharply after 1992. The greater spending power in the economy (as reflected in the growth in GDP, GNP and personal disposable income) causes a deterioration, relative to the benchmark, in the balance of payments rate by 1.25 points in 1988, and the deterioration continues out to 1992.

Turning to sectoral effects reveals a sharp contrast between the behaviour of the private and public sectors. Employment in industry, after a small rise of 310 jobs in 1988 (due to increased capacity utilisation) begins to fall relative to the benchmark and, by 1992, is about 6,850 lower. There is also a fall in industrial investment. The declines in employment and investment are mainly caused by higher industrial wage rates, induced by the fiscal expansion relative to the benchmark (by 1992, industrial wage rates are about 6% higher than those in the benchmark).

The fiscal expansion relative to the benchmark has a positive effect on employment and investment in marketed services, a sector which is largely sheltered from the loss of competitiveness suffered by the internationally exposed industrial sector. The employment gain in marketed services almost offsets exactly the losses in industry. We have cancelled the public

sector job cuts in this variant so employment in the public sector by 1992 is 10,400 higher than in the benchmark. Since we have kept emigration at its benchmark level (perhaps an overly pessimistic assumption for this variant), the fall in numbers unemployed by 1992 approximately equals the numbers of public sector jobs 'saved' (i.e., 11,200).

These public sector jobs and the other expenditure increases have been financed largely by borrowings, since the taxation system has been indexed in both variants. The increase in tax revenue due to buoyancy (i.e., with a strictly indexed tax system) by 1992 is about £630 million, but current expenditure is up by £900 million, while the total borrowing requirement is up by £490 million. The resultant accumulation of additional national debt induces an increase of debt interest of £107 million by 1992 and the debt/GNP ratio begins to climb rapidly beyond 1992.

This variant illustrates that just as the benefits of fiscal contraction take some time to show up in the economy, both in terms of restoration of balance to the public finances and the stimulation of growth in the private sector, so also do the 'wages of sin' take some time to be apparent. However, given the high level of national debt outstanding, it is likely that any deviation from a path of fiscal adjustment would immediately precipitate a rise in interest rates and thus eliminate even short-term gains. Even the five-year time horizon of our forecast is too short to capture fully the dynamics of adjustment. In a country with a four to five year election cycle, this poses very difficult problems for politicians who attempt to implement policies whose negative effects appear quickly but whose beneficial effects are delayed and uncertain.

## 4.4 : INCOMES POLICIES OR FREE-FOR-ALL

The benchmark forecast was prepared with the following assumptions for wage rates and their evolution. In the public sector, wage costs followed the details of the recently published Public Sector Pay Agreement. The exact evolution of public sector wage costs for the period 1988/1990 is given in Section 2 (Table 2.2). For the period after the expiry of the agreement public sector wage costs evolve in line with wage rates in the industrial sector, i.e., it is assumed that no new binding public sector pay policy will be in force which would keep wage costs below those obtaining in the private sector. For the entire projection period wage rates in the industrial sector are determined by a process of wage bargaining, and are influenced by the unemployment rate (the so-called Phillips curve effect), by labour productivity and by the tax 'wedge'. Wage inflation rates in the industrial sector are passed on to the marketed services sector. Hence, in the case of the private sector, we have not applied the terms of the national wage agreement in a strict sense for the period 1988-90 but have assumed some slippage.

In the case of pay policy, two variants from the benchmark were examined. In the first we imposed a rather severe pay 'freeze' in the public sector for the years 1988-90 by eliminating the 2.5 per cent annual
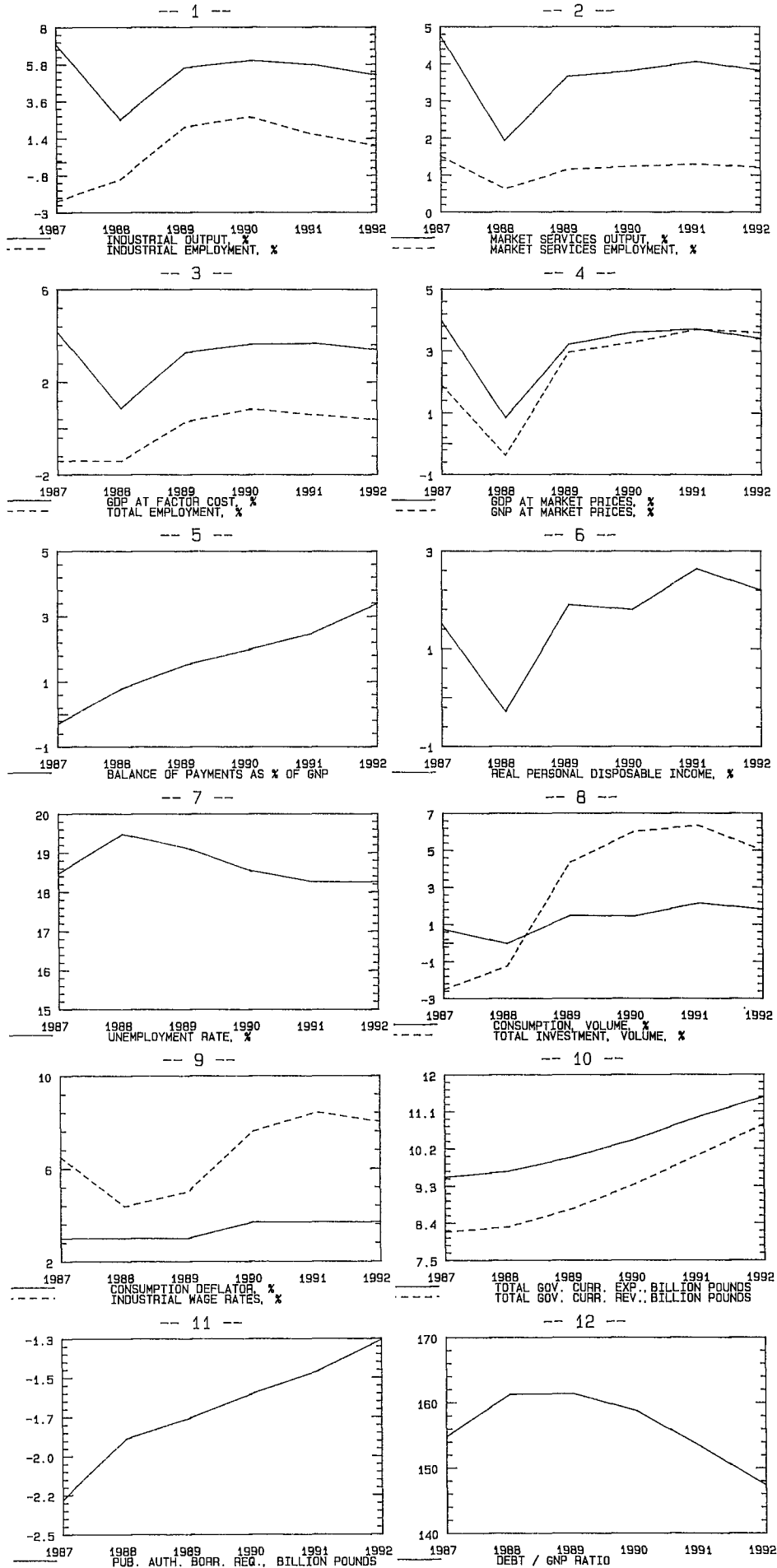
## FIGURE 4.1: Benchmark Projection
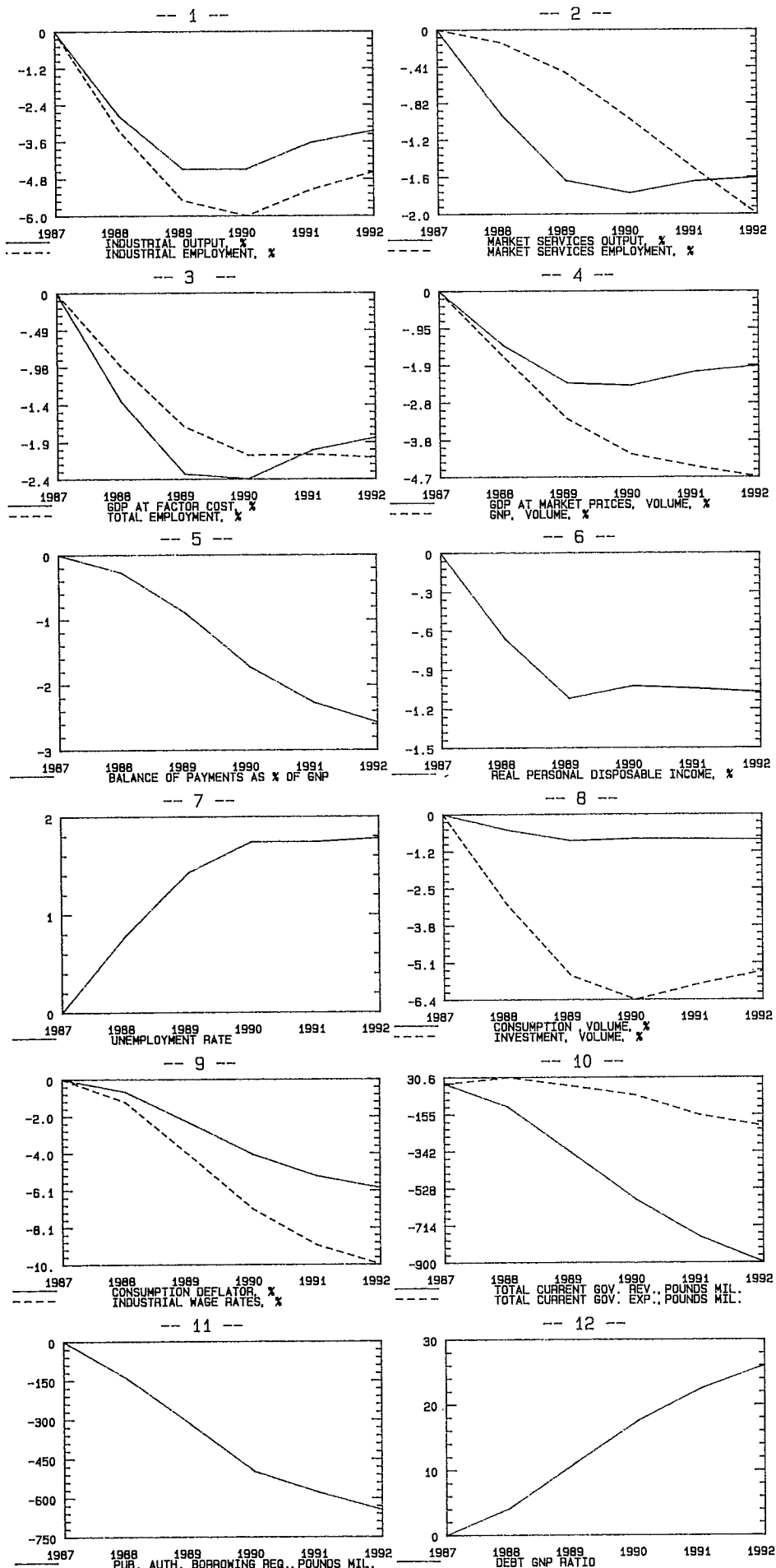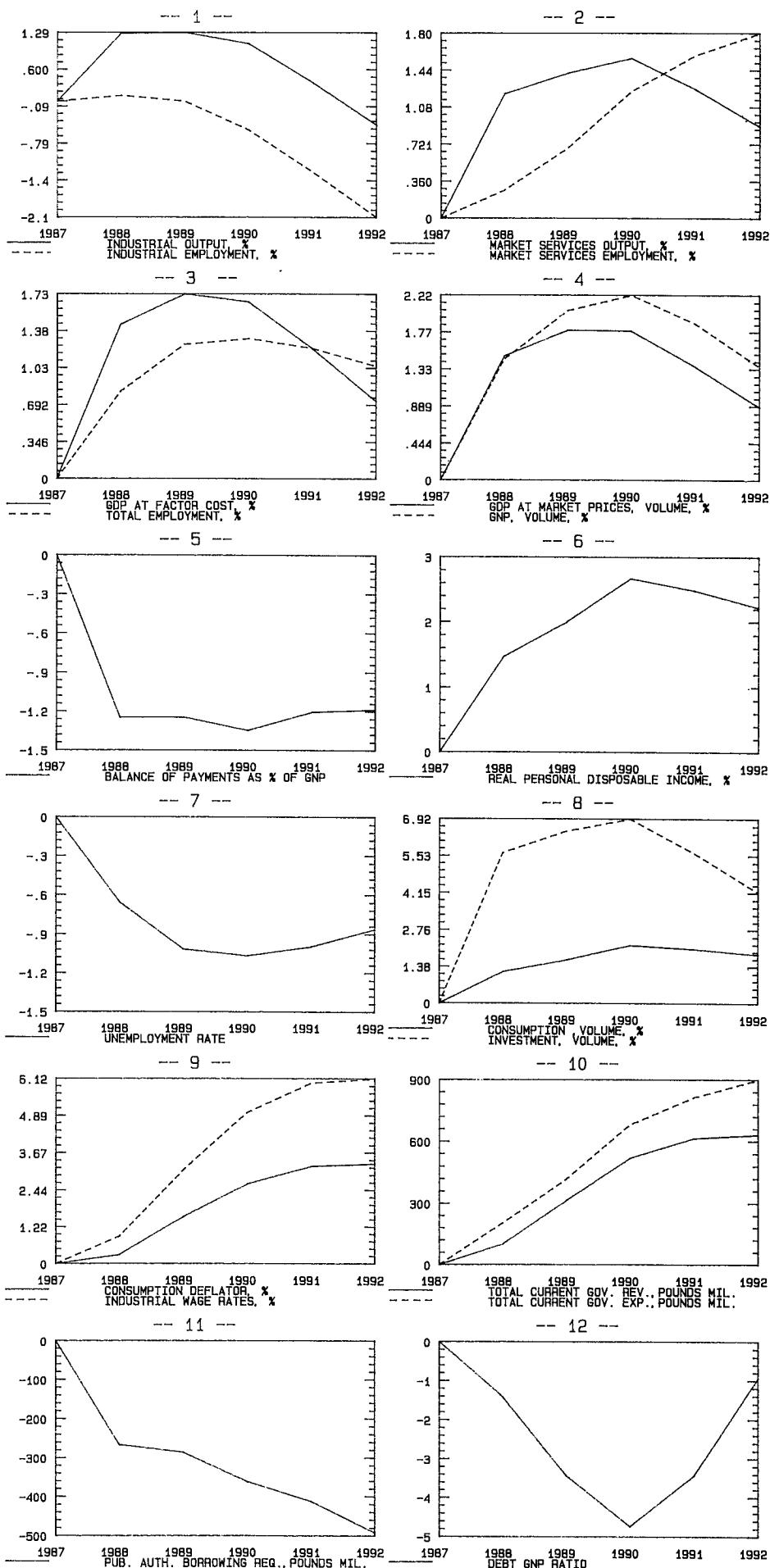
## FIGURE 4.2: Lower World Growth



-- 1 --
INDUSTRIAL OUTPUT, %
INDUSTRIAL EMPLOYMENT, %

-- 2 --
MARKET SERVICES OUTPUT, %
MARKET SERVICES EMPLOYMENT, %

-- 3 --
GDP AT FACTOR COST, %
TOTAL EMPLOYMENT, %

-- 4 --
GDP AT MARKET PRICES, VOLUME, %
GNP, VOLUME, %

-- 5 --
BALANCE OF PAYMENTS AS % OF GNP

-- 6 --
REAL PERSONAL DISPOSABLE INCOME, %

-- 7 --
UNEMPLOYMENT RATE

-- 8 --
CONSUMPTION, VOLUME, %
INVESTMENT, VOLUME, %

-- 9 --
CONSUMPTION DEFLATOR, %
INDUSTRIAL WAGE RATES, %

-- 10 --
TOTAL CURRENT GOV. REV., POUNDS MIL.
TOTAL CURRENT GOV. EXP., POUNDS MIL.

-- 11 --
PUB. AUTH. BORROWING REQ., POUNDS MIL.

-- 12 --
DEBT GNP RATIO

# FIGURE 4.3: Fiscal Indexation

## FIGURE 4.4: Public Sector Pay Freeze



-- 1 --
INDUSTRIAL OUTPUT, %
INDUSTRIAL EMPLOYMENT, %

-- 2 --
MARKET SERVICES OUTPUT, %
MARKET SERVICES EMPLOYMENT, %

-- 3 --
GDP AT FACTOR COST, %
TOTAL EMPLOYMENT, %

-- 4 --
GDP AT MARKET PRICES, VOLUME, %
GNP, VOLUME, %

-- 5 --
BALANCE OF PAYMENTS AS % OF GNP

-- 6 --
REAL PERSONAL DISPOSABLE INCOME, %

-- 7 --
UNEMPLOYMENT RATE

-- 8 --
CONSUMPTION VOLUME, %
INVESTMENT, VOLUME, %

-- 9 --
CONSUMPTION DEFLATOR, %
INDUSTRIAL WAGE RATES, %

-- 10 --
TOTAL CURRENT GOV. REV., POUNDS MIL.
TOTAL CURRENT GOV. EXP., POUNDS MIL.

-- 11 --
PUB. AUTH. BORROWING REQ., POUNDS MIL.

-- 12 --
DEBT GNP RATIO

rise due under the recent agreement, eliminating 'special' wage increases, and eliminating the super-annuation and pensions lump-sum allocated to 'buy out' the public sector job cuts. As a *quid pro quo*, we have dropped the job cuts and thus leave public sector employment essentially unchanged from its 1987 level.

In the second variant we force all wage rates (public and private sector) to be 1 per cent below the bench-mark outturn. This is quite a severe assumption, not so much in terms of the size of the reduction, but because it completely removes the mechanisms of pay bargain-ing from the model structure. Hence, there is no feedback from the labour market into wage bargaining in this variant.

We turn first to the pay-freeze/no job cuts variant (Figure 4.4). The concept of trading public sector job increases for lower pay has obvious attractions for policy-makers. However, its implementation may be fraught with difficulties. The conditions under which such a policy could be successful would probably require a very high rate of economy wide unemploy-ment (i.e., no alternative jobs) combined with unattractive emigration possibilities (i.e., high unemployment rates world wide). In such circum-stances wage inflation in the private sector would probably be already considerably dampened and the necessity to cut public expenditure would be very great. In the absence of such conditions it might be unwise for governments to assume that they can plan on the basis of a public sector labour force which would per-manently accept worse conditions of pay than their private sector counterparts. Indeed, if we allow that the recent public sector pay agreement was the best that could be negotiated, then we must also accept that there was no willingness to go the full way to agreeing to a policy resembling our variant.

With this *caveat* in mind, the results from Figure 4.4 indicate that public sector borrowing has fallen relative to the benchmark, the debt/GNP ratio has also fallen, and the balance of payments has moved more into surplus. There is very little change from the benchmark growth rate of GDP, but, with profits in industry being squeezed by higher wages (due to lower unemploy-ment) and with lower foreign debt interest payments, GNP is up by 1 percentage point in 1989, but by only 0.5 points in 1992.

The main economic difference between this variant and the benchmark derives from the interaction of the wage bargaining process in industry and the unemployment rate. The cancellation of the public sector job cuts results initially in a lower rate of unemployment (numbers are down by 6,700 in 1988). This tends to bid up wages in the private sector which induces a loss of jobs in industry (down by 5,900 by 1992) and marketed services (down by 670 by 1992). The feedback from the private sector job losses operates on the unemployment rate, so that the reduction in unemployment numbers, having peaked in 1989 at 8,800, tails off to 3,800 by 1992. Further evaluation of this variant would require us to examine how wage costs in the public sector might evolve beyond 1992. On the plausible assumption of restoration of public

sector relativities with the industrial sector, a sharp deterioration of the public finances would ensue.

We turn now to the second pay variant (Figure 4.5), i.e., a situation where all wage rates are fixed at a value which is 1 per cent below the benchmark outturn each year from 1988-92. Once again the feasibility of this variant must be questioned, in that the government has only very limited powers to impose a pay-policy on the private sector. In the past, where such agreements have been concluded, they have tended to serve as guide-lines and have often been breached. Nevertheless, this variant gives some guide as to how lower wage costs in the public and private sectors might affect economic activity.

As expected, activity in the industrial sector is boosted: employment is up by 270 initially, reaching an increase of 1,860 by 1992. However, profits are also up by £63 million in 1992, and profit repatriations are up by £21 million. In this instance we have explicitly allowed for the fact that the labour intensive industries, who stand to gain most from a cut in wage costs, have a lower propensity to repatriate profits. We return to this point in Section 4.5 below. Activity in market services is boosted by a small amount, and employment is up by only 130 by 1992. The negative effect on income of the relative cut in wage rates attenuates any positive knock-on effect from increased wage competitiveness in industry. By 1992 numbers unemployed are down by about 2,000.

Turning to the public finances, the fall in tax revenue (mainly from income tax) is almost completely compensated for by the fall in current expenditure (mainly due to lower public sector wages). Overall, there are only minor shifts in the borrowing require-ment, which disimproves by £10 million in 1988 but is improved by £5 million by 1992. The debt/GNP ratio disimproves by 1 percentage point in 1988, and is still up by 0.6 points in 1992.

In terms of the aggregate economic targets, GDP is up by just under a quarter of a point by 1992, while the increased profit outflows means that GNP falls very slightly in 1988 but is up by 0.15 points by 1992. Finally, the balance of payments rate deteriorates by a small amount (0.05 points by 1992).

In attempting to evaluate the possible relevance for the real economy of the two pay variants we must constantly bear in mind their highly conditional nature. Both variants illustrate the trade-off that exists between wages and jobs and the demonstrable gain from lower wages, leading to increased employment. In a market economy, how this trade-off is resolved over the next five years is only partially within the control of the social partners as they negotiate future pay policies. If the pay guidelines for the private sector for the period 1988-90 and beyond could be implemented in practice, and if the consequential increased profits could be even partially recycled within the domestic economy, then there is no question but that employment gains relative to our benchmark would ensue. The relevance of the above variant calculations merely lie in placing this dilemma within an integrated national macroeconomic framework.

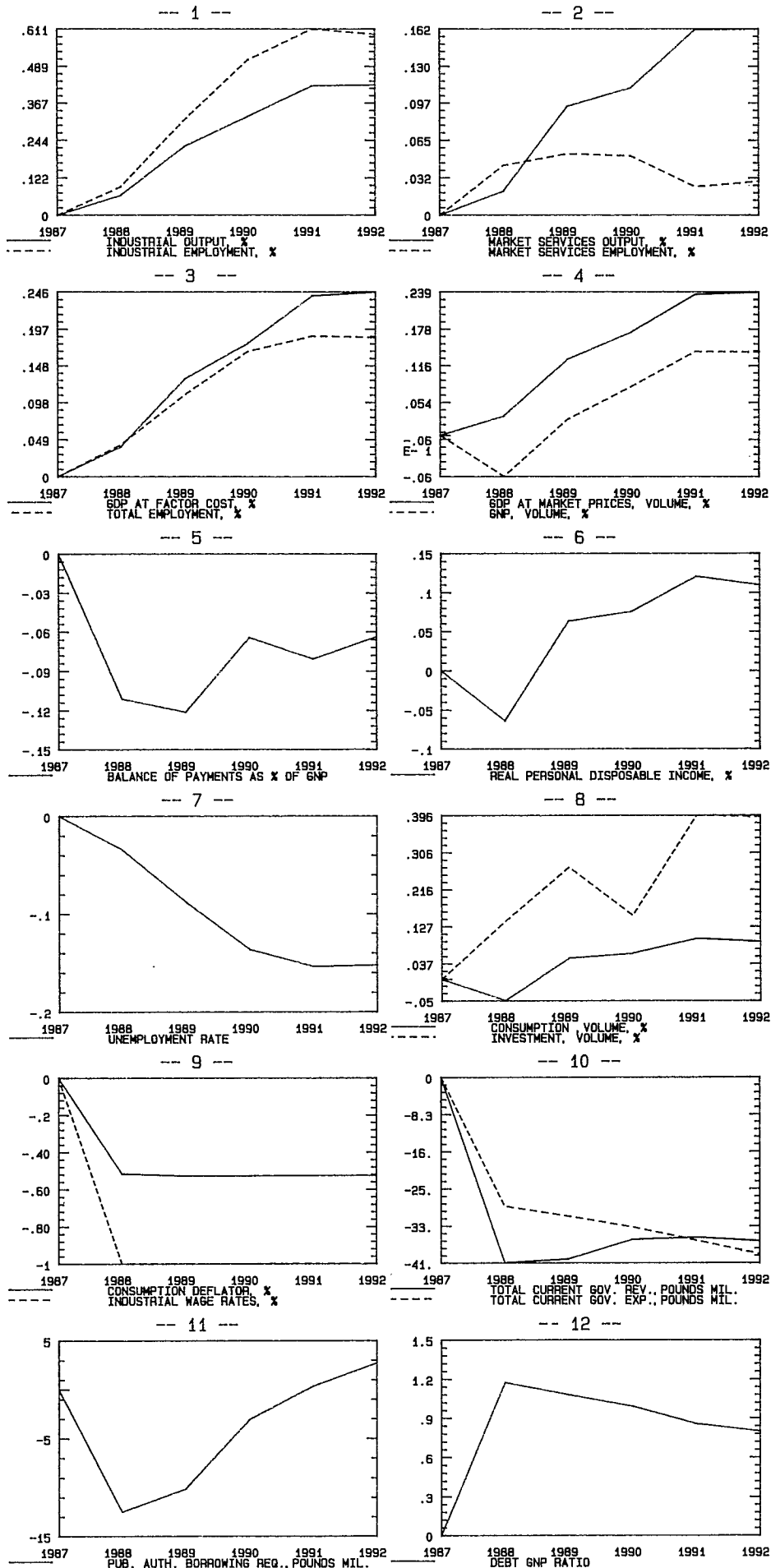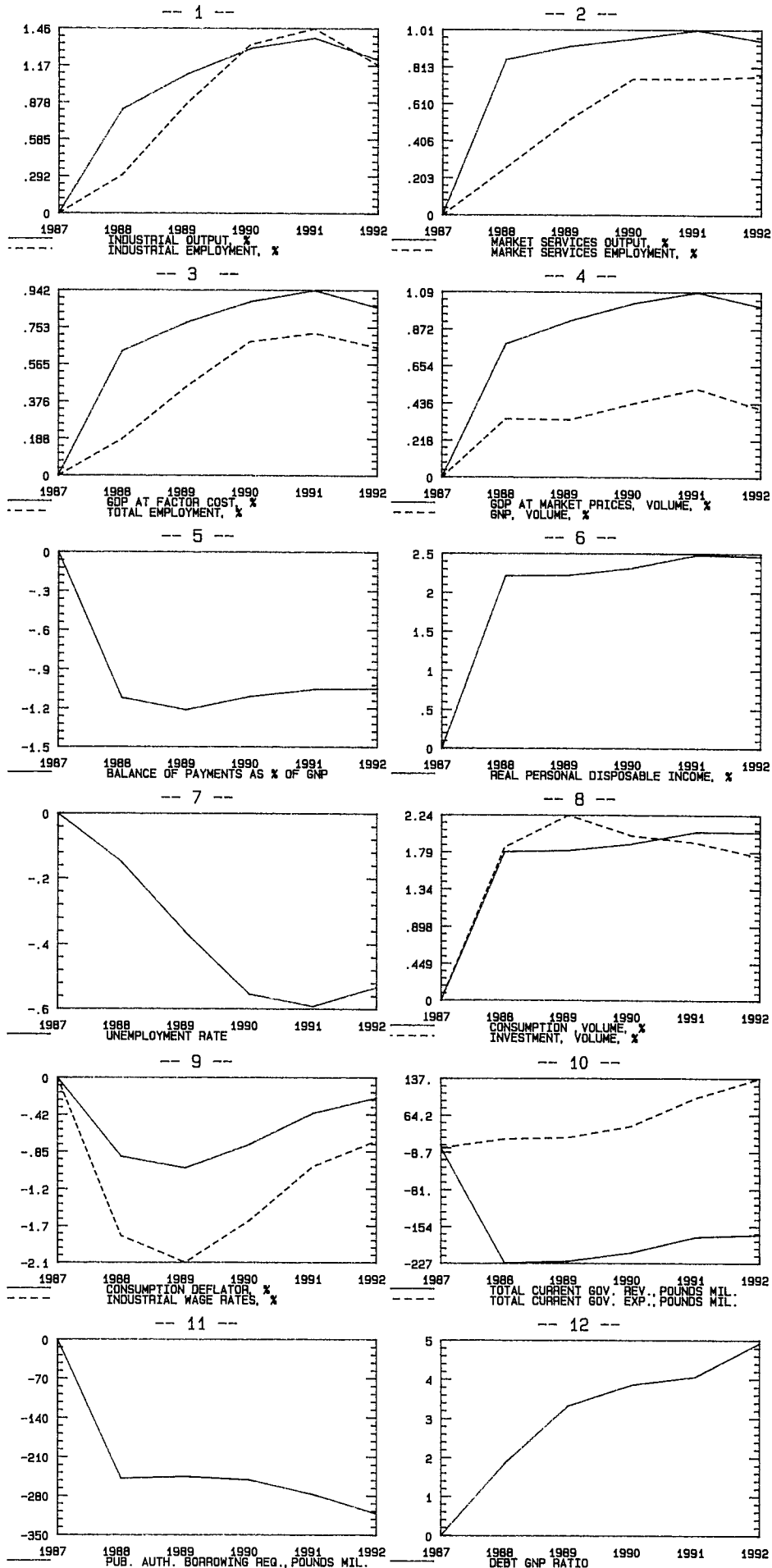## FIGURE 4.5: 1% Economy Wide Pay Cut



-- 1 --

1987  1988  1989  1990  1991  1992
INDUSTRIAL OUTPUT, %
INDUSTRIAL EMPLOYMENT, %

-- 2 --

1987  1988  1989  1990  1991  1992
MARKET SERVICES OUTPUT, %
MARKET SERVICES EMPLOYMENT, %

-- 3 --

1987  1988  1989  1990  1991  1992
GDP AT FACTOR COST, %
TOTAL EMPLOYMENT, %

-- 4 --

1987  1988  1989  1990  1991  1992
GDP AT MARKET PRICES, VOLUME, %
GNP, VOLUME, %

-- 5 --

1987  1988  1989  1990  1991  1992
BALANCE OF PAYMENTS AS % OF GNP

-- 6 --

1987  1988  1989  1990  1991  1992
REAL PERSONAL DISPOSABLE INCOME, %

-- 7 --

1987  1988  1989  1990  1991  1992
UNEMPLOYMENT RATE

-- 8 --

1987  1988  1989  1990  1991  1992
CONSUMPTION, VOLUME, %
INVESTMENT, VOLUME, %

-- 9 --

1987  1988  1989  1990  1991  1992
CONSUMPTION DEFLATOR, %
INDUSTRIAL WAGE RATES, %

-- 10 --

1987  1988  1989  1990  1991  1992
TOTAL CURRENT GOV. REV., POUNDS MIL.
TOTAL CURRENT GOV. EXP., POUNDS MIL.

-- 11 --

1987  1988  1989  1990  1991  1992
PUB. AUTH. BORROWING REQ., POUNDS MIL.

-- 12 --

1987  1988  1989  1990  1991  1992
DEBT GNP RATIO

## FIGURE 4.6: Direct Tax Cut



-- 1 --
INDUSTRIAL OUTPUT, %
INDUSTRIAL EMPLOYMENT, %

-- 2 --
MARKET SERVICES OUTPUT, %
MARKET SERVICES EMPLOYMENT, %

-- 3 --
GDP AT FACTOR COST, %
TOTAL EMPLOYMENT, %

-- 4 --
GDP AT MARKET PRICES, VOLUME, %
GNP, VOLUME, %

-- 5 --
BALANCE OF PAYMENTS AS % OF GNP

-- 6 --
REAL PERSONAL DISPOSABLE INCOME, %

-- 7 --
UNEMPLOYMENT RATE

-- 8 --
CONSUMPTION, VOLUME, %
INVESTMENT, VOLUME, %

-- 9 --
CONSUMPTION DEFLATOR, %
INDUSTRIAL WAGE RATES, %

-- 10 --
TOTAL CURRENT GOV. REV., POUNDS MIL.
TOTAL CURRENT GOV. EXP., POUNDS MIL.

-- 11 --
PUB. AUTH. BORROWING REQ., POUNDS MIL.

-- 12 --
DEBT GNP RATIO

## 4.5 : A DIRECT TAX CUT?

In public discussion of taxation it has often been suggested that a direct tax cut would stimulate the economy by lowering wage inflation through the bargaining process, thus improving the competitive position of the exposed industrial sector. This suggestion is based on the assumption that wage bargains are conducted in 'take-home' terms. It is held that such cuts would increase labour demand and might be partially self financing. No adjustment is made for induced policy reactions, such as higher interest rates.

To examine this possibility we carry out the following policy variant of the benchmark: the average rate of direct personal taxation is reduced from its 1987 level of 21 per cent by 2 percentage points and remains per- manently lower by 2 points compared to the bench- mark assumption of a fixed rate. We leave the labour supply unchanged, thus ignoring incentive effects which might encourage people to enter the labour force or to remain in it if they had previously been contemplating emigration. The results are shown in Figure 4.6.

The initial cost of the tax cut, in terms of direct tax revenue forgone, is about £280 million (rising to £300 million by 1992), almost all of which is added to the borrowing requirement. Industrial wage rates are bid down by about 2.0 percentage points by 1989 (but are only 0.70 points down by 1992). The increase in real personal disposable income tends to increase con- sumption (up by 1.8 per cent in 1988), while the lower wage inflation increases the demand for labour in industry (up by 3,680 by 1992) and marketed services (up by 3,700 by 1992). However, both the public sector borrowing rate and the balance of payments rate deteriorate by over 1 percentage point, while the debt/GNP ratio rises by almost 5.0 points by 1992. By the year 1992 the numbers unemployed are down by 6,900, but the cost to the exchequer must be offset against this (an immediate rise in borrowing of £250 million, and a rise of £312 million by 1992 when compared with the benchmark).

One of the important features of this variant concerns the effect of the direct tax cut on industrial profits. If we recall that for the period 1988-1990 the public sector wage agreement is in force in both the benchmark and this variant, then the tax cut has no influence on public sector wage costs. This is not unreasonable since the terms of the wage agreement included a commitment to reform the tax system. However, the lower wage rates in industry result in increased profits (up £113 million in 1988, and up £91 million by 1992). Given the high propensity to repatriate profits by multinational com- panies, this results in increased profit outflow compared to the benchmark (£58 million in 1988, and £54 million in 1992). This element, when combined with the increase in foreign debt interest, results in an increased net factor income outflow (up £133 million by 1992). Consequently, whereas GDP rises by 0.8 percentage points in 1988 (1.0 points by 1992), the rise in GNP is considerably less, at 0.4 points in 1988 (0.41 points by 1992).

In summary, this variant shows that a direct tax cut of the kind we have made is not self-financing in any sense since the borrowing requirement and the debt/GNP ratio deteriorate. This deterioration is perhaps exaggerated by our assumption that the public sector pay agreement would not be renegotiated in the aftermath of such cuts. Whatever its effects on economic-well being, eventually the stimulus to the private sector is weak. The public sector pay agreement for 1988-1990 precludes any feedback to lower public sector wage costs. Part of the benefits of the tax cut accrue to multinational companies who are likely to repatriate the 'wind-fall' gain in profits. The resulting wedge driven between GDP and GNP by the increase in foreign debt interest payments and by profit repatriations result in little or no GNP growth, and a rise in the debt/GNP ratio. However, the extent to which much of the benefits of the tax cut 'leaks' out of the economy in profit repatriations may be overstated. It is for labour intensive industries that the benefit of the lower wages will be greatest and these will have a considerably lower propensity to repatriate profits.

## 4.6 : LOWER WORLD INFLATION AND LOWER INTEREST RATES

In this variant we look at the effects of lower world inflation combined with constant real interest rates abroad and at home. For a range of the most important external prices (energy, other imports, world output) we have reduced the *inflation* rate by 1 percentage point for each year between 1988-92. Foreign and domestic nominal interest rates are similarly reduced by 1 percentage point. The main impact is on the interest payments on the national debt which are down by £50 million in 1988 and by £240 million by 1992. However, the total effect on the borrowing requirement is less than this.

Since we have left the public sector pay policy in force for the period 1988-90, the reduced inflation rate is not permitted to lower public sector wage costs until after 1990. However, other public expenditure from 1989 on and, more significantly, tax revenues are reduced over the whole period because of lower inflation. The reduction in tax revenue (£16 million in 1988 and £247 million by 1992) consequently exceeds the reduction in public expenditure on items other than debt interest, so that the total improvement in the borrowing requirement is £30 million in 1988 and £185 million by 1992. In summary, the public finances are significantly improved by the fall in interest rates, but there is a net disimprovement on revenue and expenditure apart from that on debt interest.

The reduced inflation and lower interest rates boosts the industrial and market service sectors initially. Industrial employment is up by a small amount in 1988 while marketed services employment is up by 200. However the cost of capital in industry is down by almost 4 percentage points by 1992 whereas the wage rate is only down by 3 points. This induces some substitution of capital for labour, resulting in a fall in numbers employed of 340 by 1992. In the case of

## FIGURE 4.7: Lower World Inflation
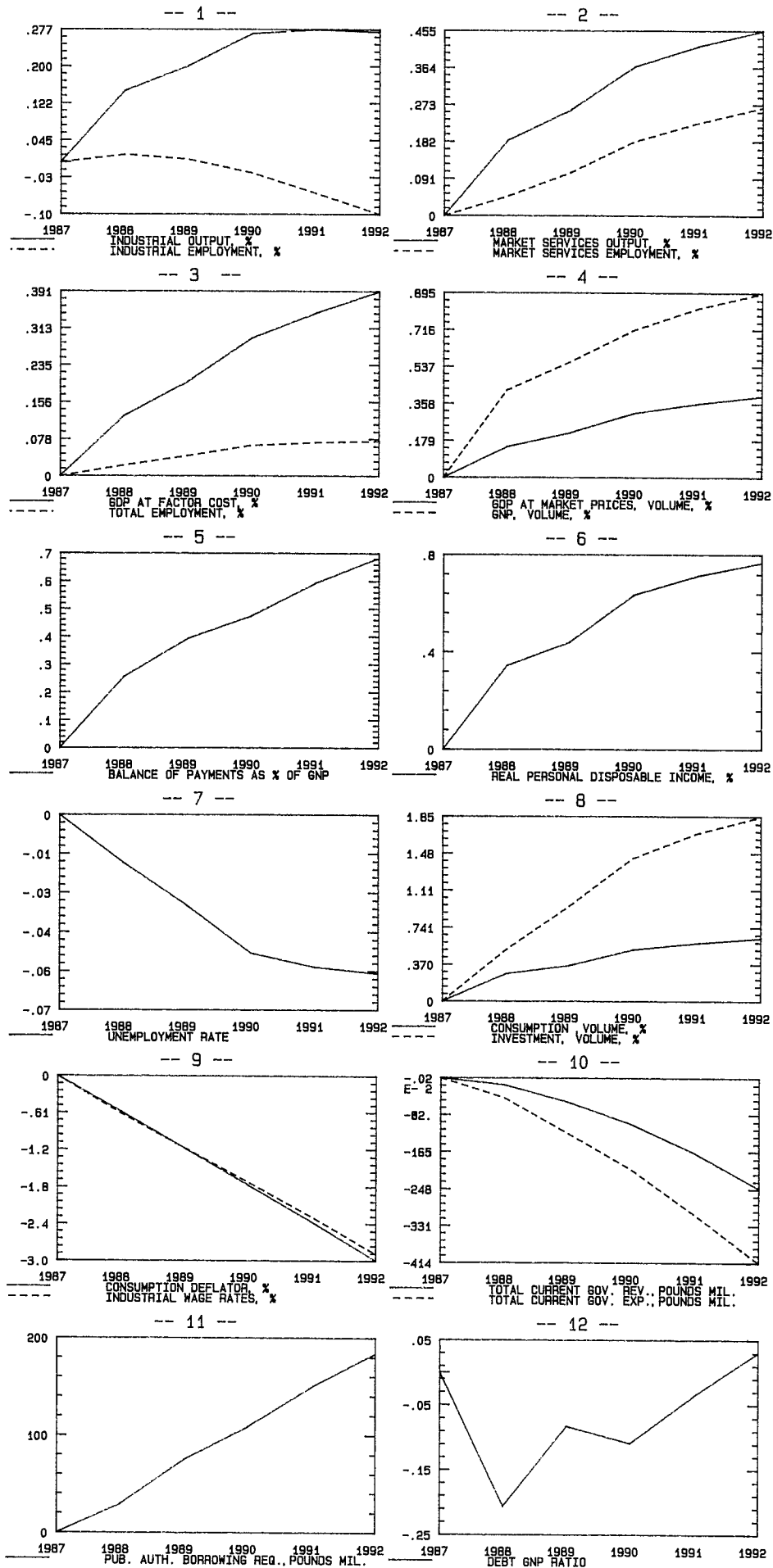
marketed services, the rise in GNP boosts activity by enough to sustain an increase in employment out to 1992. Overall, the fall in unemployment in 1988 is 240 and by 1992 it reaches 800.

This variant illustrates the importance of the benchmark interest rate assumptions in an economy burdened with a very high public foreign debt. Any fall in interest rates will have a large impact on net factor income flows. It also illustrates the dilemma posed when a public sector wage policy is negotiated for three years into the future. Such a policy essentially takes a fairly rigid view of future inflation, a view which need not necessarily be validated by subsequent events. If the fall in nominal interest rates did not occur, it would have serious consequences for the public finances.

## 4.7 : UNCERTAINTY CONCERNING FOREIGN INTEREST RATES AND EXCHANGE RATES

In preparing the benchmark projection we have assumed that an increase in the stability of the £IR vis-à-vis the DM over the period will result in Irish interest rates moving closer to the German rates, while still maintaining a significant margin compared to that currency. For the benchmark we have assumed, as a working hypothesis, fixed foreign exchange rates from the end of 1987 to the end of 1992. If the Irish pound were to follow the ECU while the DM revalued within the EMS by a limited amount over the five years, then we would expect somewhat lower inflation in Germany than the 3 per cent assumed in the benchmark and, with constant real interest rates, some fall in German nominal interest rates. This would not significantly alter the picture painted in the benchmark.

In addition to the uncertainty concerning the behaviour of exchange rates considerable doubt exists about the future path of world interest rates. In the first half of the 1980s the unexpectedly high real interest rates were a major factor in the consistent underperformance of the Irish economy compared to forecasts and expectations. Much has been written on this issue elsewhere. Here we consider some of the implications for the Irish economy of deviations from the assumed benchmark path of world interest rates. With the public sector a major net debtor (both domestically and internationally) and the private sector a net creditor, any increase in interest rates will have a disproportionate effect on the public sector finances (see previous section). For the future, even under favourable circumstances, the national debt will rise above £30,000 million in the early 1990s. As a result, the long-run direct effect of a 1 per cent rise in interest rates on the exchequer borrowing requirement would be to add £300 million or around 1.5 per centage points of GNP. When the indirect effects through the change induced in domestic (and world) economic activity are taken into account, the effects could be somewhat larger.

Generally, one would expect that to the extent that world output falls below the benchmark growth path assumed for the next five years real interest rates will also be lower. The reverse is likely to be the case if the world economy proves more buoyant than we have

assumed. On this basis the two factors will, to some extent, offset one another.

## 4.8 : UNCERTAINTY IN THE DETERMINATION OF DOMESTIC INTEREST RATES

Up to 1979 Irish interest rates closely followed movements in UK rates. Since joining the EMS it is now clear that while the general direction of our interest rates is determined by movements in world rates (with UK rates playing a particularly important role), the existence of exchange rate uncertainty means that there is also some scope for domestic policy to influence their course over time. However, the margin within which domestic policy can influence domestic interest rates is not well determined. In addition, the process whereby foreign rates affect Irish rates is far from clear.

Consequently, we do not know how the growing balance of payments surplus, a prominent feature in our benchmark projection, would affect domestic interest rates. In the benchmark we have assumed that a growth in exchange rate stability vis à vis the DM over the period will result in Irish interest rates coming closer to the DM while still maintaining a significant margin compared to that currency. This reduction in the differential between Irish and EMS interest rates is, on theoretical grounds, consistent with a growing surplus of funds on the domestic market (reflected in a growing balance of payments surplus) and reduced uncertainty concerning the position of the Irish pound within the EMS.

The most obvious area of uncertainty concerning the movement in the Irish pound/ DM interest differential is the likely future development of the DM/£IR exchange rate. While we have assumed a fixed rate of exchange in the medium term, frequent significant devaluations within the EMS would result in a continuing wide margin between Irish interest rates and foreign interest rates. Since the early 1980s this factor (exchange rate uncertainty) has resulted in the interest rate differential being generally greater than was warranted by the * expost* movement in currencies. Any failure to bring about an adjustment in the public finances would, through its effects on exchange rate expectations, have a similar effect on domestic interest rates.

## 4.9 : EFFECTS OF INTEREST RATE CHANGES ON SAVINGS

In our benchmark projection there is a small rise in the savings ratio over time. However, the changes assumed in the financial sector over the five year period could alter this behaviour. The fall in real interest rates could reduce the attractiveness of finanical assets and, therefore, of saving. In addition, the fall in interest rates would increase the value of fixed interest government debt which, through a wealth effect, could increase consumption by more than the amount implied by the standard consumption function. As against this, the age profile of the population, with a falling dependency ratio, could lead to increased savings to provide for retirement. The substantial share of income which

accrues to the private sector through their ownership of life assurance and pension fund assets may also bias upwards their savings (See FitzGerald, 1986).

On balance, it is felt that personal saving is more likely to fall than to rise in the medium term relative to the benchmark. It is currently running at a very high rate by international standards. Using the model, it is estimated that a fall in the savings ratio of approximately 1 percentage point over the period 1989 to 1992 would have the effects shown in Table 4.4.

### TABLE 4.4: Effects of a 1 per cent Fall in the Savings Ratio
(change compared to the benchmark)

| | 1992 | |
|---|---|---|
| Balance of Payments Surplus | % of GNP | -0.2 |
| Borrowing Requirement | % of GNP | -0.6 |
| Debt/GNP Ratio | % of GNP | -3.4 |
| GNP volume | % | 0.6 |
| Unemployment rate | % of labour force | -0.14 |

The net effect on the real economy would be to increase growth in the short term while reducing the assumed benefits which would accrue from the higher level of private sector investment abroad in the benchmark.

## 4.10 : EFFECTS OF FALLING REAL INTEREST RATES ON THE REAL ECONOMY

While we now have a fairly good understanding of how the economy reacts to changes in fiscal policy, we still have little reliable information on the effects of high real interest rates. The big change in the use of their funds by the company and personal sectors in the early 1980s was clearly related to a change in expected relative rates of return on different assets, in particular to the rise in real interest rates. In our benchmark projection the fall in domestic real interest rates has been assumed to have a limited effect in stimulating domestic investment in the housing sector and elsewhere. As stated in the previous section we would expect this fall to have a larger effect on the investment of domestic firms than on the investment of foreign multinationals in Ireland.

The fall in interest rates could be expected to increase the net of interest profits of the industrial sector. (In the national accounts the profits of companies are trading profits : they do not allow for payment of interest on borrowed capital). To the extent that the fall occurs through a narrowing of the differential between domestic and foreign interest rates, it should improve the relative profitability of the Irish industrial sector. Using the model, we estimate that, at a minimum, this would add a cumulative 1.5 per cent to the volume of industrial output over the period to 1992. It may well have additional effects through the market services sector which we have not been able to quantify. Such an increase in industrial output, additional to that forecast in the benchmark, would, we estimate, have the following effects on the economy (Table 4.5).

### TABLE 4.5: Effects of a 1.5 per cent Rise in Capacity Industrial Output
(change compared to the benchmark)

| | 1992 | |
|---|---|---|
| Balance of Payments Surplus | % of GNP | 0.1 |
| Borrowing Requirement | % of GNP | -0.2 |
| Debt/GNP Ratio | % of GNP | -1.6 |
| GNP volume | % | 0.5 |
| Unemployment rate | % of labour force | -0.2 |

However, experience with the model indicates that substantial further benefits would flow from the growth in capacity output in the two or three years after 1992. These additional effects could more than double the benefit to the Irish economy shown here for 1992. Obviously if firms revised their interest rate expectations more rapidly than we have assumed it would enhance the effects in 1992. As a result, while the initial effect on the debt/GNP ratio of the growth in output is quite small the cumulative effects would clearly be quite substantial.

## 4.11 : ALTERNATIVE ALLOCATION OF SAVINGS OVER FINANCIAL ASSETS

In the benchmark projection we have assumed that the proportion of net private sector investment in financial assets which is allocated to buy domestic government securities falls over time from over 80 per cent in 1986 to around 75 per cent in 1992. This means that the private sector is assumed to be allocating a higher proportion of its net acquisition of financial assets to foreign investment. We have little evidence on the sensitivity of these investment decisions to changing expected rates of return. For example, we are not in a position to model how expectations are formed, in particular concerning the exchange rate. As a result; this assumed allocation of funds must be considered very tentative.

Over the next five years we have assumed that real rates of interest in Ireland will fall more than those abroad. Other things being equal this should lead to a shift away from domestic lending to foreign lending. However, it is probable that the current level of private capital outflow reflects rather different expectations concerning exchange rate policy in the medium-term than underlie our benchmark assumptions. If our benchmark assumptions prove correct concerning future exchange rates, we would expect exchange rate expectations in the private sector to be considerably altered. The effect of this would be to reverse the private capital outflow if there were no change in interest rates. (Current yields on government debt are much higher in Ireland than in Germany and the Netherlands, if no allowance is made for the possibility of future exchange rate changes.)

However, unlike the position described above where the benchmark projection could be significantly affected by an alternative disposition of funds between real and financial assets, a different allocation between foreign and domestic government securities would not

greatly alter our benchmark projection. This is due to the fact that, for the government, foreign borrowing is the residual item which is used to ensure the financing of the borrowing requirement. If the private sector were to allocate more of its funds to buying domestic government debt rather than foreign assets, then the government would reduce its foreign borrowing by exactly the same amount. The only effect on the economy of such a switch in the long run would arise from differences in the rates of interest on government foreign borrowing and the rate of return on private sector foreign lending.

# SECTION 5

# CONCLUSIONS

## 5.1 : THE ECONOMY IN THE 1990s

Our benchmark projection shows that by the early 1990s the economy should have returned to a path of steady growth, with GNP rising by about 3.5 per cent per annum. The public finances will have been stabilised with the current deficit at about 3 per cent of GNP, the borrowing requirement at about 5.5 per cent of GNP and the debt/GNP ratio on a falling trend having peaked in 1989. The balance of payments will be in substantial and growing surplus, with net factor outflows rising more slowly than GNP, and so beginning to contribute to growth. Employment will be rising from the 1988 trough, but not by nearly enough to offset the potential rise in the labour force or to reduce the unemployment rate substantially.

These conclusions depend on the assumptions concerning the external and domestic policy environment proving reasonably accurate and the economic relationships in the model remaining stable into the future. In the following sections we explore some of the explanations underlying the projected outturn, the risks and uncertainties associated with it, and we suggest some of the policy matters which arise out of the projection and which will preoccupy policy makers in the coming years.

## 5.2 : THE REASONS FOR RECOVERY

The return to a 3.5 per cent growth rate and the gradual restoration of stability to the public finances forecast from 1989 onwards are due to five main factors.

The first factor relates to the modest but sustained growth assumed for the world economy (refer Section 4.2). The opening up of the Irish industrial sector to direct foreign investment since the 1960s has meant that the economy (in particular the industrial sector) tends to grow at least as fast as a weighted average of the major world economies (usually somewhat faster), if a sufficiently high rate of profitability is available to the investing companies.

The second factor is the effects expected to flow from the improved competitive position of the Irish economy over the period 1986-89. This will arise from both an improvement in labour cost competitiveness and also from a fall in domestic interest rates. The improvement in competitiveness will result in a continuation of the current growth in industrial output into the medium term.

The third factor, which particularly affects the aggregate growth rate in 1989 and 1990, is simply the assumed absence of any further cuts in public expenditure after 1989. Such cuts in public expenditure take some considerable time to improve the public finances but have an immediate effect on GNP. The full benefit for the public finances only comes through over a period of years. This highlights the fact that, despite resolute and immediate action on the part of the public authorities, the solution of the public finance problems has to be seen in a medium-term context.

The fourth factor concerns the effects of the expected moderation of the upward trend in factor outflows which cease to make the large negative contribution to growth characteristic of the recent past. This arises in large part as a result of the expected growth in the balance of payments surplus to the end of 1992 and the reduction in public sector foreign borrowing over the projection period.

Finally, underlying the return to growth and the long-term strength of the Irish economy is the very high personal savings rate. In the late 1970s these savings were dissipated on increases in current public expenditure or unsatisfactory public investments. However, with the public finances coming under control these savings will be available for productive investment at home or abroad. The result of this investment is seen in the projected return to growth. However, in the benchmark forecast we see a substantial part of these savings being invested abroad. The effect of this is to improve the financial circumstances of the Irish investor while having little spin-off in terms of domestic output.

## 5.3 : UNCERTAINTIES AND RISKS

The benchmark projection is a 'best guess' of the outcome but there is an obvious risk of some of the elements going wrong. The picture we present is an informed projection based on an evaluation of existing information. However, we have explored the consequences of our external and policy assumptions proving different from the benchmark values. Policy makers must take account of uncertainty and should not plan only on the basis of optimistic outcomes. A failure to form public policy with an eye to possible downside risks tended to characterise the Irish economy in the past. A greater spirit of realism permeates policy debates today, induced mainly by the considerably restricted freedom of action available to policy makers who face the consequences of past policies in terms of high levels of domestic and foreign debt.

The assumption for world growth is quite modest by past standards but the outturn could be even lower. In Section 4.2 we have examined this possibility. A cessation of world growth in 1988-89, followed by a

slow recovery, has a serious effect on the benchmark projection, reducing GNP by 4.8 points by 1992. In particular, the debt/GNP ratio is 26 points higher, and both the borrowing requirement and the balance of payments (expressed as a percentage of GNP) deteriorate by 3.7 and 2.6 points, respectively, relative to the benchmark projection.

Possibly as serious would be a rise in world real interest rates in the medium term. The calculations discussed in Section 4 suggest that a rise in world interest rates of between 1 and 2 percentage points in excess of the benchmark values could necessitate another year of cuts like those planned for 1988 in order to stabilise the debt/GNP ratio. Such a deterioration in the world financial situation could have a bigger impact on the exchequer than a fall in the world rate of growth. However, on present trends, a rise in world real interest rates seems unlikely. Certainly, if there were a recession along the lines discussed in Section 4, the fall in demand for funds would be more likely to lead to a fall in interest rates than to a rise. None the less it is important that in formulating domestic economic policy, one notes this worst case scenario.

We have examined the effects of a fall in the world rate of inflation, holding real interest rates unchanged. Experience with the recent oil price fall indicates that such a change could have an important effect on the economy in the short to medium term. With many prices fixed for a number of years into the future, in particular public sector wage rates (under the present three-year public sector pay agreement) and interest rates on domestic government debt, the effects of a fall in world inflation could be significant if not accompanied by a fall in nominal interest rates.

Although the proportion of industrial profits repatriated is projected as continuing to rise, the pattern assumed for future profit repatriation by multinational firms is important over the projection period in moderating the growth of factor outflows. If structural developments increase the rate of repatriation even above our assumptions, then growth (and to a lesser extent the public finances) would suffer.

In relation to the assumed future constancy of exchange rates, any variations from stability might cancel out. However, major variations could have damaging effects, even within the context of steady world growth (e.g., reduced competitiveness, specifically with the UK, and the allied interest rate dangers for increased debt servicing).

A crucial assumption in our benchmark projection is that the proposed public sector expenditure and employment cuts will be implemented as planned. The assumptions of policy indexation from the end of 1988 are very severe compared with earlier periods in the 1960s and 1970s. No recovery in the level of public services is offered after the emergency cuts, and there is no reduction in the average tax burden. Such a situation may not be tenable indefinitely into the future. In Section 4.3 we explored the alternative of no public sector employment cuts and the preservation of the real level of all other public expenditure, i.e., a 'no cuts' scenario. The preservation of public employment and

expenditure gives a short-term boost to growth but is purchased at the expense of increased borrowing and some loss of competitiveness in the private sectors, especially in the exposed industrial sector. For an economy with a high rate of unemployment, but with a considerably lower debt/GNP ratio and borrowing requirement than we have at present, the state would have some scope for discretionary fiscal expansion. However, the existing massive imbalances in the public finances effectively preclude such expansion well into the future. Furthermore, we have ignored any adverse reaction by financial markets which could immediately drive up interest rates in the event of deviation from the path of fiscal adjustment.

The above risks facing the economy in the medium term could be considered to be on the 'down side'. However, there are also a number of factors which could lead to a better than expected outturn. Needless to say, higher world growth, lower interest rates, greater competitiveness, etc., would pose no difficulties. As discussed in Section 4, the growth in the balance of payments surplus in the medium term could bring about a change in behaviour through increased consumption or, preferably, through increased investment which would add to growth in output and employment in the medium term.

The benchmark forecast could be considered rather pessimistic on domestic wage costs in the early 1990s. We assume that the rapid rise in unemployment in the aftermath of the public expenditure cuts has an immediate effect in moderating wage claims in the private sector. In the early 1990s the rate of unemployment, although remaining high, will decline slowly. This turnaround in behaviour will tend to drive up wage rates. As was shown in Section 4.4, a more moderate development in domestic wage costs over the period 1988-90, while out of character with past behaviour, could do much to improve the growth in employment and help share the benefits of the recovery in the economy by providing for more jobs at lower rates of pay. Present institutional arrangements seem to make this trade-off between pay and jobs difficult to achieve in Ireland, although the pay guidelines go some of the way towards it.

Finally, a continuing cause for concern is the low domestic value added of industrial exports. While we envisage that circumstances will be more favourable for the growth of domestic industry over the next five years than at any time since the late 1970s, there is no certainty that these benefits will be realised. If, through an increased contribution from domestic firms, the rate of profit repatriation were to fall to 50 per cent from the 60 per cent assumed in the benchmark, this would add around 3 per cent to the level of GNP by 1992 and reduce the borrowing requirement in that year by about 1 percentage point of GNP.

## 5.4 : A POLICY AGENDA FOR THE FUTURE

In the short run the policy implications of our benchmark projection are clear and unambiguous: the public sector expenditure and employment targets must be

achieved if stability is to be restored to the public finances. Depending on the outturn for 1988, the crucial issue will be whether enough progress has been made to afford indexation of expenditures in 1989 (which would require tight control of expenditure and, indeed, some cuts in existing programmes) or whether further cuts of a major scale are needed. In the longer term we assume fiscal indexation and the indications are that any more expansionary policy would be likely to cancel the gains made in the cuts of 1988.

Experience from the first half of this decade indicates that it is wiser to plan the reform of the public finances assuming that the performance of the economy will be less satisfactory than predicted. While the time-path of adjustment in the public finances which we see for the medium term assumes a neutral fiscal policy after 1988, it would be prudent to recognise that further major budgetary action may be necessary in 1989. A decision on this matter will have to be made in the light of the much more detailed short-term assessments of the 1988 and 1989 outlooks, as they become available over the coming months. In particular, an unfavourable development of world interest rates would require fairly rapid action to ensure progress in solving the public finance problem in the medium-term. If the world economy develops along the lines assumed in Section 2 we feel that no further drastic fiscal action would be required in 1989 and that the natural recovery in the economy would be sufficient to achieve the debt/GNP target and to approach closely the borrowing target set out in the *Programme for National Recovery*. However, past experience has shown that the task of maintaining public expenditure fixed in real terms is by no means easy and that cuts in services are very unpopular and provoke fierce opposition from the public. In addition to a continued re-examination of the efficiency of public expenditures, it will be necessary to carry out in parallel a detailed examination of the tax system. This re-examination will become all the more urgent as we face into the changes which will be necessary under the Single European Act and are required to harmonise our tax system with other European economies.

The effect on the economy of cuts along the lines planned for 1988 are fairly severe while the benefits which outdoubtedly flow in terms of an improvement in the public finances take a long time to emerge. As a result, measures of this type would not be suitable for dealing with a temporary upset in the path of adjustment. In the case of a mild world recession, where the problem was an expected temporary fall in growth, it would be more desirable to raise taxes temporarily through expanding the tax base. In particular the same detailed examination should be given to tax expenditures (structures, allowances, rates, coverage, purpose, etc.), as was given in this year's *Estimates* to all kinds of public expenditure. When the anticipated world recovery occurred the increased tax revenue could be used to reform the overall tax system. On the other hand, if the upset in the world economy was very severe, in particular if it involved a big rise in real interest rates which could have quite a long-term effect on the economy, then it would be necessary to continue into 1989 the kind of retrenchment process envisaged for 1988.

A feature of our medium-term projection was the future behaviour of profit repatriation by multinational industries producing in Ireland. It is important to state clearly that these outflows are a normal feature of such foreign direct investment. Any crude attempt to impose high taxes on such profits or to prevent their repatriation by imposing restrictions on capital flows would most certainly cause an abrupt cessation of foreign investment in Ireland together with the closure of many existing enterprises. The direct benefit to the Irish economy from multinational activity consists in the wages paid to Irish workers directly employed, the national product indirectly generated in the domestic industrial and market service sectors and any taxes paid on profits. From this must be netted off the costs of attracting these firms to Ireland (capital grants, training grants, other promotional activities). Research has shown that such firms tend to be fairly capital intensive, source most of their inputs abroad, have relatively weak downstream links with the rest of the economy and repatriate the major part of their profits.

The challenge for industrial policy in the coming years is to build on our existing industrial strengths and attempt to develop firms which will retain a greater portion of added-value within the economy. To do this within a reduced budget will indeed demand inspiration of a high order. The dilemma of policy is particularly acute here: low wage costs are one element serving to attract foreign industry to Ireland but the high rate of profit repatriation means that the domestic wage bill is the main benefit received from such industrial activity. More detailed measures need to be examined which will change the balance of growth in the industrial sector in favour of domestic firms and stimulate the growth of service activities. Constraints on public finances mean that this must be achieved by measures which do not involve additional grants and subsidies.

Another feature of our projection was the increasing balance of payments surplus and the continued high rate of private capital outflows. The policy challenge here lies in designing ways of encouraging domestic fixed capital formation. This is not an area where fiscal macro management is appropriate. Rather, structural micro measures, which do not involve any Exchequer cost, are needed to make it easy for domestic firms to set up and develop within Ireland.

If the actual outturn in the medium term proves to be close to that of the benchmark forecast, it will be necessary to consider what policies can be deployed to deal with the continuing high rate of unemployment and the related problem of the distribution of income. There is no simple answer to this problem. As outlined in Section 4, tax cuts on their own are not a satisfactory tool for producing a lasting increase in domestic output and demand for labour. Our experience of the 1970s and the subsequent experience of larger and more closed economies such as France and the US highlights this conclusion. Instead, we must consider how

domestic costs can be contained in order to achieve a reduction in unemployment. The pay guidelines laid down for the private sector in the recent *National Programme* address this issue, but it remains to be seen to what .extent these guidelines are effective in containing wage costs. However, since industrial employment is projected to be lower in 1992 than in 1984, where are the jobs to come from? It seems that we must *either* accept higher unemployment, increased maldistribution of income and wealth, and continuing high emigration *or* we must find other sources of employment to complement our present forms of industry. It may be possible to identify less capital intensive industries or service activities which are not totally dependent on industrialisation and have the potential to be internationalllly traded to a much greater extent than at present.

Finally, as part of the programme for adjustment in the public finances and as a contribution towards rectifying the unfavourable movement in the distribution of income in the medium term, it is desirable that the tax system should be reformed to extend the tax base. The changing pattern of growth envisaged for the Irish economy in the medium term makes such a change especially desirable.

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# DETERMINANTS OF PROFIT OUTFLOWS FROM IRELAND

## E. O'Malley and S. Scott

During the first half of the 1980s, a very large deficit developed in "Trading and Investment Income" transactions in Ireland's balance of international payments. In other words, payments of profits, dividends, royalties and debt interest leaving the country came to exceed greatly such payments coming in from abroad. This was due to rapid growth in the flow of such payments leaving the country, rather than to any decline in the inflow from abroad, as is seen in Table 1. As the table also shows, however, after growing continuously from 1980 to 1985, the outflow of Trading and Investment Income payments stopped growing in 1986. These trends were of considerable macroeconomic importance because the growing deficit on Trading and Investment Income was a major factor serving to drive a substantial wedge between GDP and GNP, meaning that an increasing proportion of the value of what was produced in Ireland was leaving the country.

The debit or outflow side of Trading and Investment Income can be broken down into (a) National Debt Interest, (b) Other Interest Payments and (c) Profits, Dividends and Royalties, as shown in Table 2. Of these three items, Profits, Dividends and Royalties grew fastest in the first half of the 1980s and is now much the largest in size. This article focuses on the outflow of Profits, Dividends and Royalties (which we will simply call profits, for convenience), attempting to explain its remarkable growth in the years 1980-85 and considering whether the recent virtual halt in its growth is likely to prove lasting.

## Sources of Profit Outflows

The amount of profits leaving the country can be regarded as a function of the level of sales of foreign-owned companies operating in Ireland, their profits as a percentage of sales, and their propensity to withdraw their profits from the country. Thus profit outflows could rise (or fall) if sales of foreign-owned companies rise (or fall), if their profitability rises (or falls), if their propensity to withdraw profits rises (or falls), or some combination of these factors. To explain fully the trends in outflows, therefore, one would need to look at changes in sales, profitability and the propensity to withdraw profits, but unfortunately there is no consistent data series on the profitability of foreign-owned companies except for a few isolated years, or on the proportion of their profits which leaves the country. It is possible, however, to gain a fairly good impression of trends in sales of the relevant foreign-owned firms and, as it happens, this alone provides a reasonably adequate explanation of trends in profit outflows in the 1980s.

In order to look into this, however, since there is again no regular data series on sales of foreign-owned companies as a distinct group, it is necessary to start by identifying which sectors are both predominantly composed of overseas firms and responsible for most of the profits of such firms. Then the sales of these sectors can serve as a proxy for the sales of foreign firms from which profit outflows arise. There are, of course, overseas firms operating in many different sectors, including mining,

**TABLE 1: Trading and Investment Income, 1980-86 (£ million)**

|  | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|---|---|
| Credit, or Inflow | 465 | 567 | 585 | 549 | 628 | 722 | 648 |
| Debit, or Outflow | 832 | 1,083 | 1,523 | 1,745 | 2,300 | 2,728 | 2,695 |
| Net Balance | −367 | −516 | −938 | −1,196 | −1,672 | −2,006 | −2,047 |
| Net Balance as % of GDP | −3.9 | −4.5 | −7.0 | −8.1 | −10.2 | −11.6 | −11.2 |

Sources: CSO *Balance of International Payments* bulletins, and *Economic Review and Outlook 1987* for GDP data.

**TABLE 2: Trading and Investment Income, Debit or Outflow, 1980-86 (£ million)**

|  | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 |
|---|---|---|---|---|---|---|---|
| National Debt Interest | 193 | 266 | 526 | 597 | 720 | 795 | 761 |
| Other Interest | 381 | 455 | 498 | 490 | 598 | 612 | 588 |
| Profits, Dividends, Royalties | 258 | 362 | 499 | 659 | 983 | 1,321 | 1,346 |
| Profits etc. as % of GDP | 2.8 | 3.2 | 3.7 | 4.5 | 6.0 | 7.6 | 7.4 |

Sources: CSO *Balance of International Payments* bulletins, and *Economic Review and Outlook 1987* for GDP data.

many services and nearly all sectors of manufacturing, but much of their activity and the bulk of their profits are concentrated in a relatively small number of manufacturing sectors. The IDA (1985, Section 5.5) mentions an estimate that about 92 per cent of profit outflows came from manufacturing industries in 1983, although the OECD (1985, pp. 47,48) gives a lower estimate of about 78 per cent for 1984. At any rate, manufacturing is by far the most important area to consider, and within manufacturing in turn, the profits of overseas firms are highly concentrated in a small number of sectors. Table 3 shows estimates of employment, sales and profits of foreign-owned firms in a number of sectors in 1983 (about the middle of the period we are referring to), based on unpublished details from IDA surveys.

It can be seen that this small number of industries accounted for over 85 per cent of the profits of foreign manufacturing firms, which probably meant close to 80 per cent of profits of all foreign-owned firms. The profits of overseas firms in these selected sectors, at £698 million in 1983, may be compared with a total profit outflow of £659 million in that year. In each of these sectors, overseas firms accounted for at least three-quarters of sales and their profit rates were high — from 19.7 per cent of sales in the Computers & Office Machinery/ Electrical Engineering group to 41.8 per cent in the Pharmaceuticals/Soft Drink Concentrates group. So trends in sales of these selected sectors should have a major influence on total profits of foreign firms and hence on profit outflows. Trends in the sales of other sectors, by contrast, would probably bear little or no relationship to profit outflows, either because they are not dominated by foreign firms or because their profit rates are low or negligible.

### The Meaning of Profits

Before attempting to test this hypothesis, it may be worth pointing out that the term "profits" could be somewhat misleading in the present context. And indeed the profit rates as a percentage of sales in some sectors might seem almost incredibly high if they are taken at face value. It should be noted, therefore, that the recorded profits of the Irish subsidiaries of foreign-owned firms represent simply the excess of their sales revenue over their own costs of production, and for a number of inter-related reasons this can represent a larger amount than the true profits accruing to the firm as a whole from its Irish operation.

First, there are often considerable research and development (R&D) costs incurred outside Ireland, which are part of the firm's overall costs. If these costs are not explicitly charged to the Irish subsidiary, they are not counted as part of its costs of production and this leads to relatively high recorded profits here. Second, there may be other costs incurred by the firm outside Ireland, such as administration, distribution and marketing, and if these are not explicitly charged to the Irish subsidiary this will again minimise its costs of production and maximise the profit recorded in Ireland. The relatively favourable tax treatment of profits of manufacturing firms in this country would give firms an incentive to

maximise their profits here by such methods. Third, and for the same reason, there is an incentive for multinational companies to supply inputs from other branches of the firm to their Irish subsidiaries at artificially low prices, or to invoice exports from Ireland to other branches of the firm at artificially high prices. To the extent that it occurs, this practice, which is known as transfer-pricing, would also have the effect of artificially boosting the profits recorded in Ireland in order to gain the maximum benefit from the tax concessions offered here. (See O'Leary, 1984, for further discussion of these points, and their implications.)

But even if one regards the recorded profits of foreign-owned firms as being artifically high for these reasons, the fact remains that they are recorded in this way and enter into the national accounts as profits, much of which then leave the country and are recorded as profit outflows in the balance of payments. Thus the recorded profit outflows could in principle be subject to change if changes occur in the practices of companies with respect to transfer-pricing or charging Irish subsidiaries for services or technology. This means that our hypothesis that trends in profit outflows are closely related to trends in sales of foreign-owned companies depends in part on an assumption that there is some degree of consistency over time in these practices which could influence the profitability of foreign firms in Ireland and hence profit outflows.

### Data Sources

To test the hypothesis that profit outflows are related to sales of the industries included in Table 3, we need a series of data on their sales over a number of years. The sectors in Table 3, however, are as classified by the IDA, whereas the available time series data on sales are those published by the Central Statistics Office (CSO) which classifies some industries in slightly different ways. Nevertheless, in most cases it is clear enough which CSO industries correspond to those in Table 3. By comparing employment data from the two sources it is clear that the IDA's Computers & Office Machinery and Electrical Engineering combined correspond closely to the CSO's Office & Data Processing Machinery (NACE code 33) and Electrical Engineering (NACE 34) combined, even though the IDA tends to include rather more in Computers & Office Machinery and less in Electrical Engineering than the CSO does. Pharmaceuticals (NACE 257) is much the same in IDA and CSO data, and the IDA's Instrument Engineering and Healthcare Products combined correspond quite closely to the CSO's Instrument Engineering (NACE 37).

The main difficulty arises in the case of Soft Drink Concentrates, which are included in the Miscellaneous Foodstuffs sector (NACE 417-418 and 423), in the CSO's Census of Industrial Production (CIP), combined with a number of other products some of which are mainly produced by Irish indigenous firms. Although Soft Drink Concentrates in 1983 accounted for more than half of the value of output of Miscellaneous Foodstuffs, there was still a sizeable minority of its output attributable to other products. Furthermore, in the CSO's Industrial

**TABLE 3: Employment, Sales and Profits of Foreign Firms in Selected Sectors, 1983**

| Sector | Employment | Sales £m | Profits £m | Percentage of Total Foreign Manufacturing Profits |
|---|---|---|---|---|
| Computers & Office Machinery, Electrical Engineering | 18,249 | 1,539.3 | 302.7 | 37.1 |
| Pharmaceuticals, Soft Drink Concentrates | 3,776 | 678.9 | 283.7 | 34.8 |
| Instrument Engineering, Healthcare Products | 7,072 | 366.6 | 111.9 | 13.7 |
| Total | 29,097 | 2,584.8 | 698.3 | 85.6 |

*Sources:* Employment from IDA Employment Survey. Sales and Profits from unpublished details of the survey reported in IDA (1985). We are grateful for the assistance of the IDA in providing these data.

Turnover series Miscellaneous Foodstuffs is combined together with a still larger group of products under the heading Other Foods (NACE 411, 414, 415, 417/8 and 423). And since this series is much more up to date than the CIP, and also provides quarterly data unlike the CIP, we are obliged to use it for econometric testing rather than the CIP itself. This means that, for our purpose, turnover of the Other Foods sector provides the best available indicator of trends in sales of Soft Drink Concentrates over time, but it is likely to be an inaccurate indicator to some extent and for this reason we must exercise some caution in using it. In testing the relationship between profit outflows and sales of our selected industries, therefore, we will do so alternately including and excluding the sales of Miscellaneous or "Other" Foods to see which variant produces the better results.

The CSO's Industrial Turnover Index series is available on a monthly and quarterly basis and is generally published just a few months after the period in question. These turnover indices for Office & Data Processing Machinery, Electrical Engineering, Pharmaceuticals, Instrument Engineering and Other Foods can serve as indicators of the sales of predominantly foreign-owned and highly profitable industries.

Alternatively, one could use corresponding categories of exports for this purpose, since foreign firms in the industries referred to export virtually all of their output (over 95 per cent in 1983 according to the survey reported in IDA (1985)). One advantage of using export data is that they are even more up to date than the turnover indices. In addition, since the foreign firms in the sectors concerned export virtually all their output, while the minority of Irish firms in these sectors do not, exports could be a better indicator of the activity of foreign firms than turnover data for the whole sector. A drawback with using export data, however, is that they are classified quite differently from industrial production, so that one cannot identify precisely which export items come from the industries identified in Table 3. But the main items are fairly clear and the following categories can be taken as corresponding quite closely to the exports of the industries concerned: Miscellaneous Edible Products & Preparations (SITC 09), Organic Chemicals (SITC 51), Inorganic Chemicals (SITC 52), Medicinal & Pharmaceutical Products (SITC 54), Office Machinery & Automatic Data Processing Equipment

(SITC 75), Telecommunications & Sound Recording, Reproducing Equipment (SITC 76) Electrical Machinery, Apparatus & Appliances n.e.s. (SITC 77), and Professional, Scientific & Controlling Apparatus n.e.s. (SITC 87).

In practice, the sum of the value of these export items has been quite close to the combined turnover of the selected industries, at least when calculated on an annual basis, with the difference between them being less than 3 per cent in 1985 and 1986. But there are some greater differences between them when calculated on a quarterly basis, so it is worth using both when quarterly data are involved to see which explains the profit outflows best.

Figure 1 shows the trend in the selected exports (including miscellaneous foods) compared with profit outflows (drawn to a different scale) over the past 10 years, with the data presented on an annual basis. The trends seem sufficiently similar to justify the suggestion that there is a relationship between the two, and hence also between the turnover of the selected industries and profit outflows. For econometric testing of this relationship, one needs more observations, and fortunately quarterly data on profit outflows are available from the beginning of 1981, quarterly turnover indices are available from the beginning of 1980 and quarterly exports can be calculated for the same period.

**Regression Results**

We will now describe attempts at fitting equations to these data. There are 6½ years of quarterly figures for profit outflows. Looking at the graphs of these 26 observations along with observations for our selected exports and turnover, in Figure 2, profit outflow movements appear to succeed movements in exports by a quarter or more. We also know that all these series exhibit seasonal patterns which in turn might impart a seasonal pattern to the relationships between profit outflows and exports or turnover. A priori, we might also assume that the relationship is linear in so far as profits are likely to be a stable share of exports or turnover rather than that a certain percentage rise in exports should induce a certain percentage rise in profit outflows.

# FIGURE 1

## SELECTED EXPORTS AND PROFIT OUTFLOWS, ANNUAL



| SYMBOL | SCALE | VARIABLE |
|---|---|---|
| —— | ( 0, 4200) | SELECTED EXPORTS, MILLION POUNDS |
| – – | ( 50, 1500) | PROFIT OUTFLOWS, MILLION POUNDS |
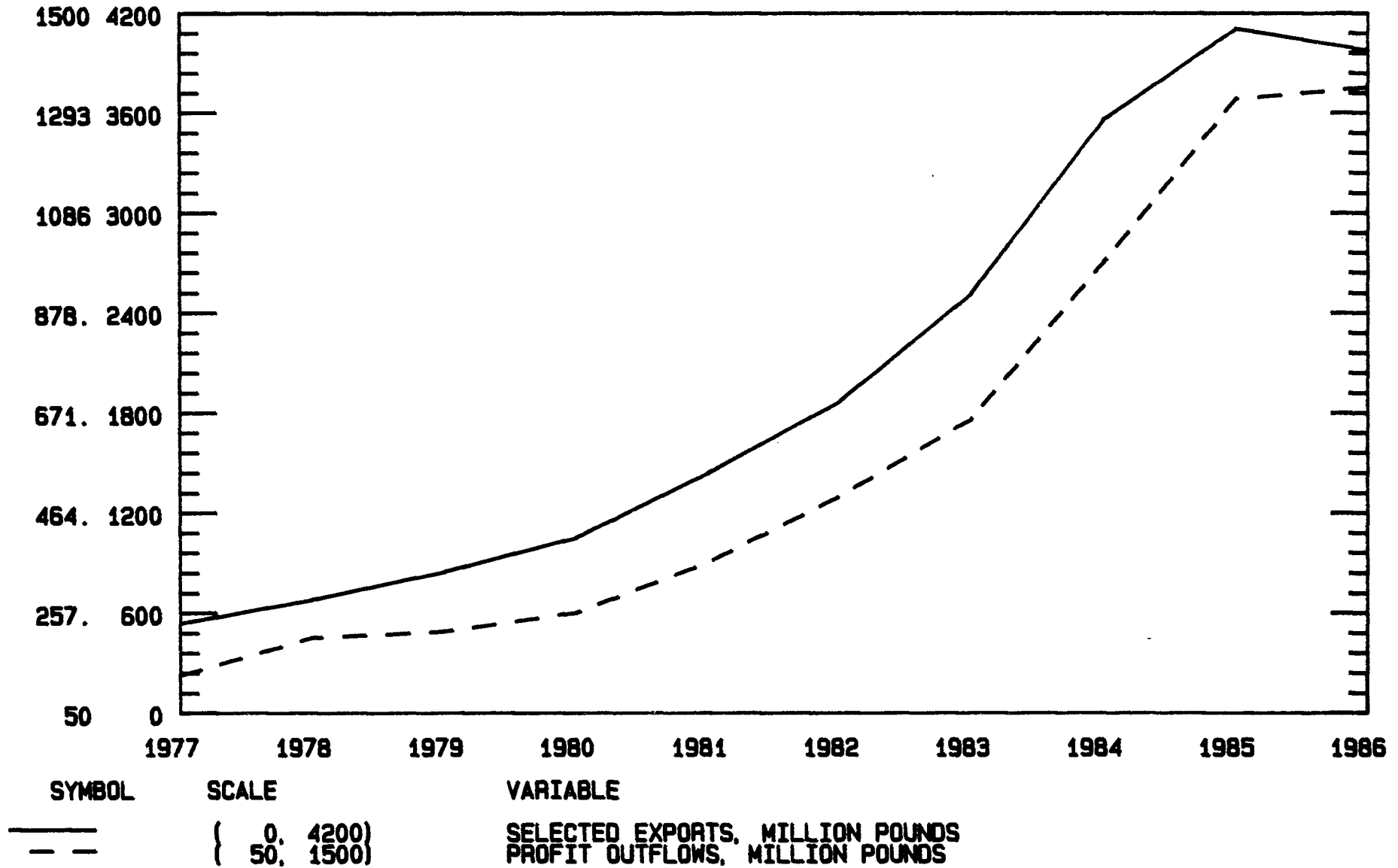
# FIGURE 2

## SELECTED EXPORTS, TURNOVER AND PROFIT OUTFLOWS, QUARTERLY



SELECTED EXPORTS, MILLION POUNDS
SELECTED TURNOVER, MILLION POUNDS
PROFIT OUTFLOWS, MILLION POUNDS
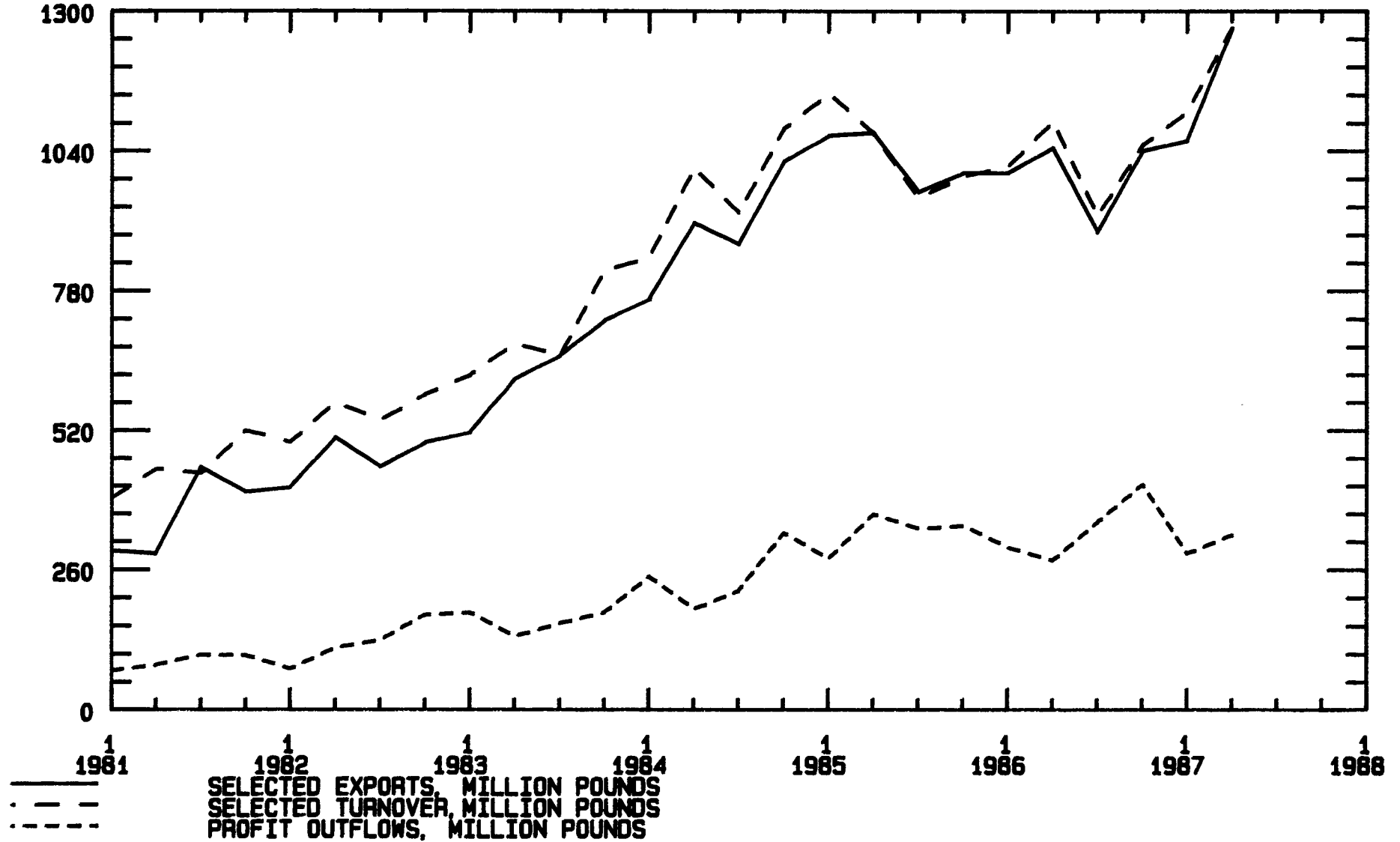
A satisfactory model based on exports two quarters previously, $(X_{-2})$, is shown below (t values in parentheses). The variables $Q_1$, $Q_2$, and $Q_3$ are seasonal effects such that for the first quarter's profits the coefficient of $X_{-2}$ is (0.41 − 0.03), for example. The seasonal effects are associated with the slope rather than with the intercept in order to allow a multiplicative effect. With profit outflows growing so steeply over the period it would not be reasonable to assume a fixed constant seasonal effect. In the first equation Miscellaneous Foods are excluded from exports, in the second equation they are included.

Information on turnover, however, is available one quarter later than information on exports, so that for short-term forecasting, the equation using exports will be more useful. As to the question whether Miscellaneous Foods should be included, we note that on an econometric basis there is no real improvement either way.

### Projections

The regression results give a reasonable explanation of trends in profit outflows in the 1980s to date, showing that by far the most important determinant has been

$$\text{Profit outflows} = -\ 16.66 + X_{-2}\ (0.41 - 0.02\ Q_1 - 0.05\ Q_2 - 0.04\ Q_3)$$
$$\qquad\qquad (1.15) \qquad\quad (16.68)\quad (.89)\qquad (2.48)\qquad (1.72)$$
$$\qquad\quad \text{Adj } R^2 = .93 \qquad SE = 27.76 \qquad\quad DW = 2.0$$

$$\text{Profit outflows} = -\ 18.13 + X_{-2}\ (0.37 - 0.02\ Q_1 - 0.04\ Q_2 - 0.03\ Q_3)$$
$$\qquad\qquad (1.26) \qquad\quad (16.83)\quad (.93)\qquad (2.27)\qquad (1.27)$$
$$\qquad\quad \text{Adj } R^2 = .93 \qquad SE = 27.51 \qquad\quad DW = 2.0$$

These equations have a good fit judged by the $R^2$. Exports lagged two quarters are highly significant. The coefficients on $X_{-2}$ suggest the magnitudes given in Table 4 for what might loosely be termed the marginal propensity to expatriate, that is the percentage of an extra unit of export earnings from our selected sectors that shows up as expatriated profits two quarters later. In fact the percentages exaggerate the true propensity of the selected sectors to expatriate profits. This is because the profit outflow figures refer to *all* sectors and not just to our selected sectors, so that the expatriated profits of the selected sectors alone would be a slightly lower percentage of their sales.

Strictly speaking, the significance of the seasonal terms as a group is not proven, according to the F test. However, they appear to be plausible and so are retained. The pattern of coefficients is consistent with firms rationally delaying expatriating their profits until the fourth quarter. The next highest coefficient being the first quarter possibly reflects the operation of an end-March to end-March financial year in some firms.

Log linear relations offer no improvement on the linear relations above, judging from comparable adjusted $R^2$. Details of a selection of other equations which have been estimated with the same data can be found in Scott and O'Malley (1987).

Turnover for our selected industries is as good an explanatory variable than as exports, as the following regressions show. Excluding Miscellaneous Foods in the first equation and including them in the second, we have:

### TABLE 4: Expatriated Profits as a Per cent of Selected Export Earnings

| | Seasonal quarters in which expatriation occurs | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Without Misc. Foods | 39 | 36 | 37 | 41 |
| With Misc. Foods | 35 | 33 | 34 | 37 |

trends in the sales of certain sectors which are predominantly foreign-owned and highly profitable. Since movements in profit outflows generally follow movements in sales with a lag of half a year, the regressions can also be used for short-term forecasting. Thus, on the basis of exports already recorded up to June 1987, it is possible to project outflows for the whole of 1987. Using the four equations above yields the forecasts in Table 5.

### TABLE 5: Forecast Profit Outflows in 1987 (£ million)

| | Equation with Exports | Equation with Turnover |
|---|---|---|
| Equation without Miscellaneous Foods | 1,359 | 1,346 |
| Equation with Miscellaneous Foods | 1,412 | 1,394 |

The forecasts for 1987 from the "without food" equations give profit outflows virtually unchanged from the 1986 level of £1,346 million. When food is included

$$\text{Profit outflows} = -\ 38.77 + TO_{-2}\ (0.44 - 0.005\ Q_1 - 0.05\ Q_2 - 0.04\ Q_3)$$
$$\qquad\qquad (2.42) \qquad\qquad (16.53)\quad (0.21)\qquad (2.40)\qquad (1.89)$$
$$\qquad\quad \text{Adj } R^2 = 0.93 \qquad SE = 28.42 \qquad\quad DW = 1.88$$

$$\text{Profit outflows} = -\ 55.9 + TO_{-2}\ (0.39 - 0.004\ Q_1 - 0.04\ Q_2 - 0.03\ Q_3)$$
$$\qquad\qquad (3.25) \qquad\qquad (16.41)\quad (0.2)\qquad (2.06)\qquad (1.47)$$
$$\qquad\quad \text{Adj } R^2 = 0.92 \qquad SE = 28.76 \qquad\quad DW = 2.03$$

# FIGURE 3 (A)

## THE REGRESSION FIT, QUARTERLY DATA



PROFIT OUTFLOWS, ACTUAL (MILLION POUNDS)
PROFIT OUTFLOWS, ESTIMATED (MILLION POUNDS)
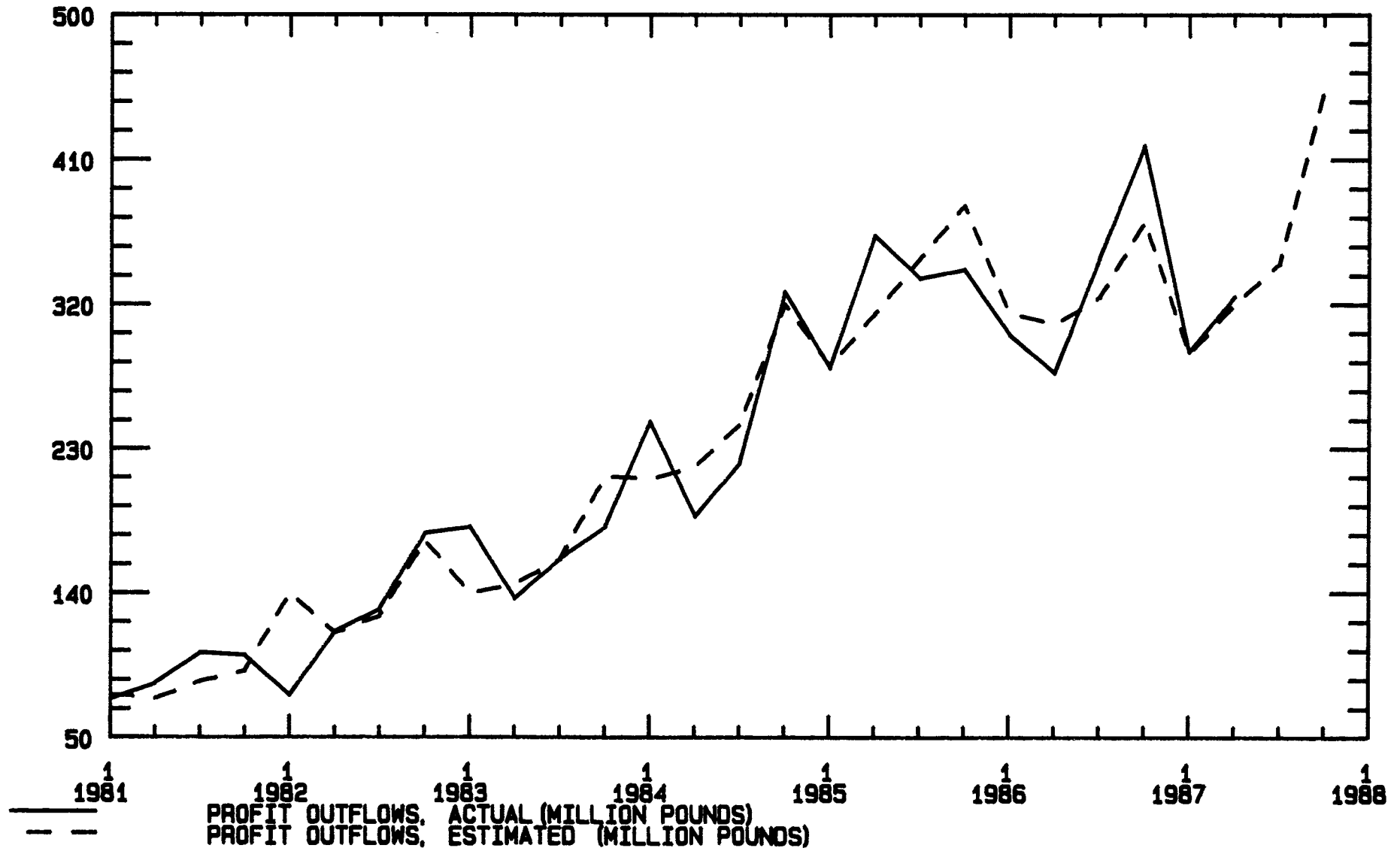
# FIGURE 3 (B)

## THE REGRESSION FIT, ANNUAL DATA



PROFIT OUTFLOWS, ACTUAL (MILLION POUNDS)
PROFIT OUTFLOWS, ESTIMATED (MILLION POUNDS)
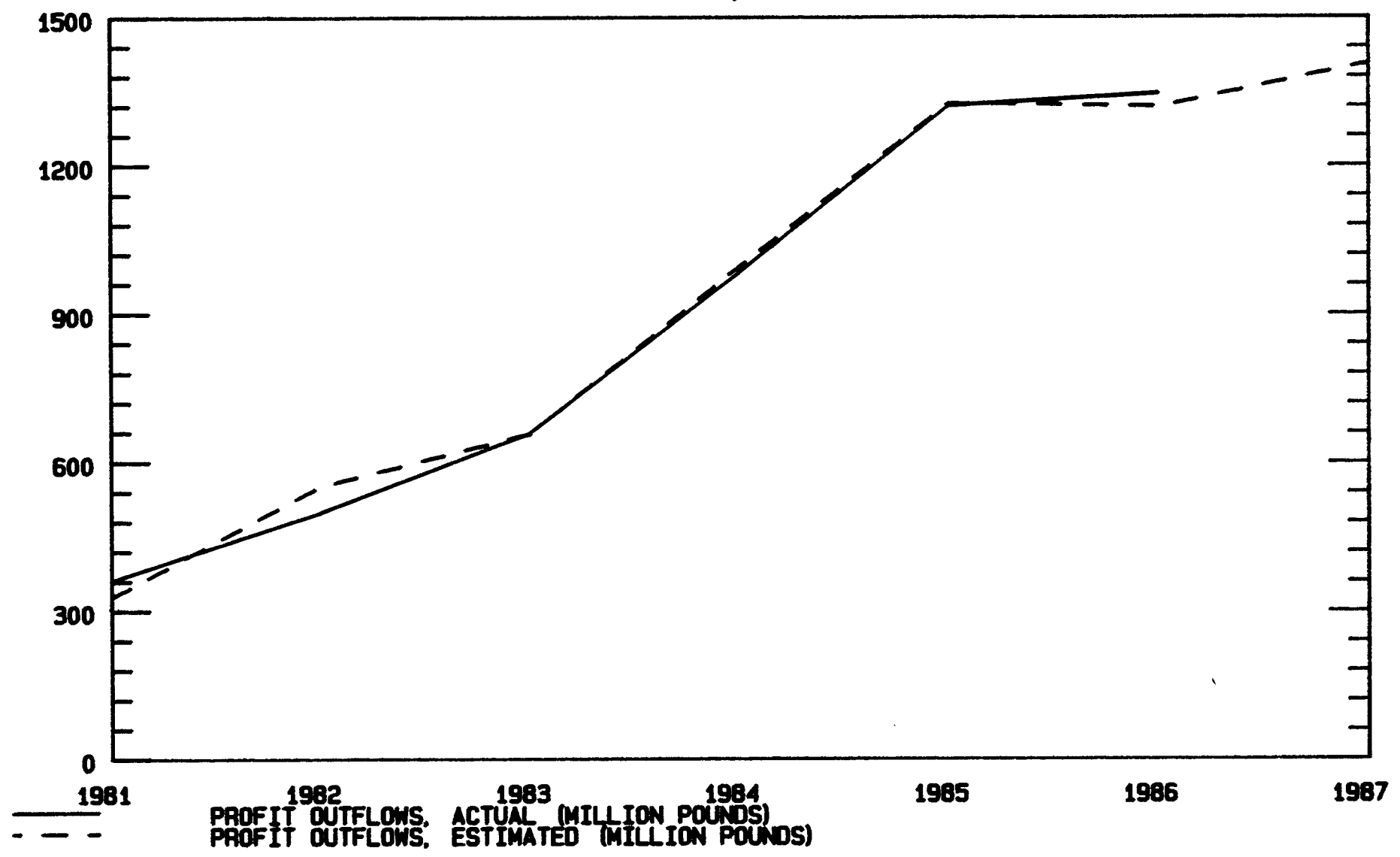
there is some £50 million extra profit outflow. The extra arises because exports and turnover in Miscellaneous Foods showed a sharp increase in the first two quarters of 1987. Thus, for example, exports in the relevant four quarters, 1986/3 to 1987/2, increased by £124 million compared with the previous corresponding four quarters. The £50 million represents 40 per cent of this increase, 40 per cent being close to our coefficient for expatriation. The unfortunate aspect of this divergence of projections is that the surge in Miscellaneous Foods is very recent and only when third and fourth quarter figures of profit outflows are published might the relative performance of the models become clear.

The quarterly percentage error of the fit is sometimes quite large. Figure 3(a) shows the fitted line for the equation using exports including Miscellaneous Foods, and forecasts for 1987. The errors do not have an identifiable pattern to them, suggesting some as yet unknown factor at work. However, over any given year the quarterly errors tend to cancel out giving a reasonable annual fit. The tracking performance on an annual basis and the forecast for 1987 are illustrated in Figure 3(b).

For the purpose of explaining past trends, the model presented in this paper is clearly very satisfactory on econometric criteria. The version using exports including Miscellaneous Foods had an error of only £4 million in each of the first two quarter's profit outflows for this year. However, owing to the difficulty in properly isolating highly profitable foreign firms in the Miscellaneous Foods sector, it is not clear whether this sector should be included. The estimate of profit outflows in 1987 from the different versions of the model ranges from £1,346 million to £1,412 million.

Despite the good fit, we suspect there are some other factors which should also be taken into account. The propensity to expatriate profits and timing will be affected by expectations, and the magnitude of profits will tend to be affected by changes in the relative prices of inputs versus outputs. This in turn may be influenced by policy in the home countries of the companies. Nevertheless, it is clear that the main determinants of profit outflows in the 1980s to date have been identified.

Looking beyond the immediate prospects for 1987 to the outlook for the next few years, it must be recognised that the relationship between profit outflows and sales of our selected industries, which has been apparent up to the present, will not necessarily continue indefinitely in the same way. Changes in this relationship could begin to occur for a number of reasons. For example, new sectors could emerge as important areas of activity for overseas firms and hence as significant sources of profit outflows, whether in manufacturing industry or in service activities such as financial services. In addition, even within our group of selected industries, if there are markedly different rates of growth between sectors with different rates of profitability, this could lead to a changing relationship between their total sales and profit outflows. Or if the companies concerned begin to change their practices with respect to transfer-pricing or charging their Irish subsidiaries for technology, marketing or other services, this could also change the relationship between sales and profits of the Irish subsidiaries, and hence profit outflows.

For these or other reasons, one could not be confident that the relationship between profit outflows and the sales of our selected industries will continue entirely unchanged. Nevertheless, it seems likely that trends in the sales of these foreign-owned manufacturing industries will continue to be the major determinant of the trends in profit outflows for some time to come, since the sort of influences just mentioned which could change the relationship would probably only emerge rather gradually.

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# THE FOOD PROCESSING INDUSTRY

## A Matthews and R. O'Connor

## Introduction

The manufacture of food and drink represents a large part of our total manufacturing capacity whether measured in terms of jobs, output, or exports. The whole industry can usefully be divided into two parts; the primary processing sector (consisting of bacon, beef and lamb factories, dairying, milling, canning or preserving of fruit and vegetables, fish processing and sugar refining), and a secondary manufacturing sector which, to a great extent, relies on the output of the primary sector for its raw materials.

Table 1 gives a breakdown of output and employment in the food and drink industries in 1984. Total employment in that year amounted to 48,400 which was 24.6 per cent of the numbers employed in manufacturing industry as a whole. Net output was £1,288 million, or 24.4 per cent of the net output of all manufacturing industry. Within the processing sector about 70 per cent

of employment and output occurred in the meat and dairying sectors. Within the secondary manufacturing sector the largest employers were bread, biscuit and flour confectionery, cocoa, chocolate and sugar confectionery, and brewing and malting. However, the largest net output occurred in the miscellaneous foods industry, even though employment was only 2,100 workers. These foods are high value added products with low labour requirements such as packaged soups, baby foods, flavourings and spices, concentrated soft drinks and so on.

The processing sector is based to a great extent on home farm produce and a high proportion of this produce is currently exported in an unprocessed or slightly processed form. For example, about 16 per cent of cattle disposals are exported as live animals and nearly 50 per cent of beef exports go out in carcase bone-in form. Of the milk sold off farms, almost 70 per cent is

**TABLE 1: Persons Engaged in the Food and Drinks Industries and Net Output 1984**

| Nace Code | | Persons Engaged ('000) | Net Output £m |
|---|---|---|---|
| | *Agricultural processing sector* | | |
| 412 | Slaughtering, preparing and preserving of meat | 10.4 | 203.2 |
| 413 | Manufacture of dairy products | 9.0 | 194.4 |
| 414 | Processing and preserving of fruit and vegetables | 1.6 | 23.0 |
| 415 | Processing and preserving of edible fish and other sea food | 1.3 | 22.3 |
| 416 | Grain milling | 1.0 | 21.8 |
| 420 | Sugar refining | 1.9 | 39.9 |
| 422 | Animal feed | 2.2 | 67.5 |
| | Total | 27.4 | 572.1 |
| | *Secondary food and drink manufacture* | | |
| 419 | Bread, biscuit and flour confectionery | 8.3 | 99.5 |
| 421 | Coca, chocolate and sugar confectionery | 3.8 | 69.8 |
| 424 | Spirit distilling and compounding | 0.8 | 63.2 |
| 427 | Brewing and malting | 3.5 | 146.7 |
| 425 426 428 | Manufacture of wine, cider and soft drinks | 2.0 | 53.8 |
| 411 417 418 | Vegetable and animal oils and fats | 0.5 | 9.2 |
| 423 | Miscellaneous foods | 2.1 | 273.3 |
| | Total | 21.0 | 715.5 |
| Total for processing and manufacturing of food and drink | | 48.4 | 1,287.6 |
| Total for all manufacturing industries | | 196.2 | 5,274.8 |
| Food and drink as per cent of all manufacturing | | 24.6 | 24.4 |

made into butter (a low value added product), a high proportion of which is sold into intervntion. The proportion going into cheese, dried milk and other high value added products is only about 20 per cent, with 10 per cent going for the liquid trade. Of the fish marketed for human consumption, only about 15 per cent is smoked, salted and preserved. The remaining 85 per cent is marketed in a fresh, chilled or frozen form. It should be stated, however, that fishermen usually receive higher prices for fish sold for direct consumption (in fresh, chilled or frozen form) than they do for fish going for processing and similarly for most other food products.

At a time when the unemployment rate in the country is very high, increasing the degree of value added in the food and drink industries has become a major aim of policy of successive governments. The 1985-87 government plan *Building on Reality* saw considerable potential for the further development of the food industry in Ireland, and said that in future, government strategy would be directed to encouraging the sector to seek out ·and exploit opportunities for the production of consumer-type products especially for export (p. 46-47). The recent *Government Programme for National Recovery* (1987) also gave a major priority to the development of the food industry and saw significant opportunities in certain segments for the creation of employment and wealth. The State agencies active in the promotion of the food industry are being co-ordinated under a special Ministerial Office for Food in order to make their activities more effective

The purpose of this paper is to consider the recent performance of the Irish food industry and to investigate some of the constraints on its expansion. We begin in Section 1 by setting out its employment record over the past decade and investigate the contributions of higher output and greater productivity in accounting for these trends. Some aspects of the competitiveness of the Irish food industry in relation to the European market are examined in Section 2. In our view, the beef industry holds out the most potential for job creation in the medium term, and we outline in some detail the specific constraints on increasing the amount of value added beef processing in Section 3. In Section 4 the employment outlook in other sectors of the food industry is more briefly reviewed. The main constraints facing the industry are summarised in Section 5, where

we argue that there is a need for new strategic thinking on development policies for the food industry if the decline in employment over the past decade is to be reversed.

## 1. Employment Performance of the Irish Food Industry

The recent employment performance of the food and drink industry is reivewed in Table 2. Total numbers employed grew during the 1970s to reach a peak of 57,100 in 1979 and subsequently fell by around 2,000 jobs per year until 1985. The downward trend slowed down in 1986 when numbers fell by less than 1,000. This pattern of increasing employment followed by a decrease occurred in both the food and drink sub-sectors, although analysis by dependence on primary raw materials indicates that expansion took place mainly in the supply-driven processing sector, while employment in secondary manufacturing has been in almost continuous decline over the period. During the 1970s total manufacturing employment increased at a faster rate than food and drink employment, and since the recession began in 1979 the pace of employment loss in the food and drink sector has been slightly faster than for manufacturing as a whole.

Employment change in any industry can be decomposed into changes in gross output and changes in gross output per person employed. Such decomposition throws light on the forces at work behind the simple totals. Table 3 gives details on an industry basis. The 1985 data on output and employment at the level of industrial sectors were constructed with the kind assistance of the CSO.

This more disaggregated view of employment performance reveals some interesting trends. In the primary processing sector, the poor employment performance of tillage-based industries stands out. Employment in dairying has also fallen, although this is partly accounted for by the decision of liquid milk firms to convert from staff employees to contract roundsmen for milk delivery. In this sector, only fish processing employment has expanded significantly, albeit from a low base, while employment in meat processing, after showing some increase, is now almost back at its 1973 level. In the secondary food manufacturing sector, miscellaneous foods and distilling are the only industries to

## TABLE 2: Employment in the Food and Drink Industry, 1973-85

| Sector | 1973 | 1979 | 1980 | 1982 | 1985 |
|---|---|---|---|---|---|
| Food | 46,200 | 49,100 | 47,600 | 44,600 | 39,100 |
| Drink | 7,900 | 8,000 | 8,100 | 7,600 | 6,400 |
| Primary processing | 29,100 | 31,900 | 31,100 | 28,900 | 26,200 |
| Secondary food manufacture | 25,000 | 25,200 | 24,600 | 23,330 | 19,300 |
| Total food and drink | 54,100 | 57,100 | 55,700 | 52,200 | 45,500 |
| Total manufacturing | 207,600 | 228,200 | 226,800 | 214,800 | 189,000 |
| Food and drink as % of total manufacturing | 26.1% | 25.1% | 24.6% | 24.3% | 23.8% |

*Source:* CSO

show increased employment, but in both cases relatively small absolute numbers are involved.

Differing output trends between industries partly account for the divergent employment experiences. Here a distinction can be made between the primary processing sector, which experienced significant output growth in the 1970s followed by much slower growth in the 1980s, and the secondary manufacturing sector, in which output grew more slowly but more steadily. Examination of the output per worker data in the final three columns shows that, on average, growth was similar in the two sub-sectors, so it was the bigger increase in production in primary processing which accounted for its somewhat better employment performance.

There was a noticeable speeding up in the rate of growth in output per worker during the 1980s. Its increase in the food and drink industries, on average, was somewhat below that of total manufacturing over the period, but this is a phenomenon of the 1982-85 period during which there was a dramatic upsurge in the recorded output per worker in manufacturing industry.

The more detailed record by industry also repays examination. A drawback of year-on-year comparisons, such as those shown in Table 3, is that the trends shown are sensitive to the precise years chosen. This may be a particular problem in the primary processing sector of the food industry where there are cyclical and weather-induced variations in raw material availability and therefore in output and output per worker levels. This needs to be borne in mind in interpreting the figures shown. Dairying, animal feeds, miscellaneous foods and soft drinks appear to have experienced above average output per worker growth over the period (the figure for dairying is influenced by the reclassification of liquid milk roundsmen mentioned above). In contrast the bakery industry has experienced only a very slow improvement in output per worker during the past decade. This may reflect its status as a non-traded sector in the past, but points to the potential for additional employment loss in the sector in future if the adoption of new technology speeds up, or competition from imports intensifies. Fish processing and distilling are two anomalous cases in which output per worker appears to have fallen during the 1980s. This is probably best explained by problems of statistical coverage and definition.

The following conclusions can be drawn from this discussion. There has been a steady increase in output per worker in the food and drink industry, and the rate of increase has accelerated in more recent years. For the food industry to be a net creator of jobs, the volume of production must increase at a faster rate than output per worker. In the case of primary processing, the volume of throughput is determined by the availability of agricultural output. The volume of gross agricultural

**TABLE 3: Changes in Employment, Gross Output and Gross Output per Head in the Food and Drink Industry**

| Sector | Employment | | | Output Volume | | | Output per Worker | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1973 | 1980 | 1985 | 1973 | 1980 | 1985 | 1973 | 1980 | 1985 |
| | | | | Base 1973 = 100 | | | | | |
| Agricultural processing sector | | | | | | | | | |
| Meat | 100 | 125 | 106 | 100 | 141 | 163 | 100 | 113 | 153 |
| Dairy | 100 | 105 | 91 | 100 | 146 | 188 | 100 | 139 | 208 |
| Fruit/veg. | 100 | 69 | 54 | 100 | 81 | 84 | 100 | 117 | 155 |
| Fish | 100 | 121 | 168 | 100 | 171 | 222 | 100 | 141 | 132 |
| Milling | 100 | 80 | 55 | 100 | 109 | 92 | 100 | 136 | 168 |
| Sugar refining | 100 | 114 | 85 | 100 | 122 | 129 | 100 | 108 | 152 |
| Feeds | 100 | 108 | 74 | 100 | 159 | 173 | 100 | 148 | 233 |
| Total | | | | | | | | | |
| Primary | 100 | 107 | 90 | 100 | 138 | 158 | 100 | 128 | 175 |
| Secondary food manufacturing | | | | | | | | | |
| Oils/fats | 100 | 94 | 63 | 100 | 98 | 87 | 100 | 104 | 138 |
| Miscellaneous | 100 | 145 | 153 | 100 | 321 | 337 | 100 | 159 | 221 |
| Bakery | 100 | 103 | 79 | 100 | 99 | 90 | 100 | 96 | 114 |
| Sugar confect. | 100 | 76 | 55 | 100 | 84 | 93 | 100 | 100 | 170 |
| Distilling | 100 | 154 | 300 | 100 | 305 | 400 | 100 | 198 | 133 |
| Soft drinks | 100 | 105 | 80 | 100 | 145 | 176 | 100 | 137 | 220 |
| Brewing | 100 | 97 | 68 | 100 | 111 | 112 | 100 | 115 | 164 |
| Total | | | | | | | | | |
| Secondary | 100 | 98 | 77 | 100 | 121 | 141 | 100 | 123 | 183 |
| Food | 100 | 103 | 85 | 100 | 134 | 159 | 100 | 130 | 188 |
| Drink | 100 | 102 | 80 | 100 | 126 | 139 | 100 | 124 | 173 |
| Manufacturing | 100 | 109 | 91 | 100 | 134 | 175 | 100 | 123 | 192 |

Notes: The relative importance of each industry in employment terms is shown in Table 1. The gross output indices for primary processing and secondary food and drink manufacture were calculated by weighting trends in the individual components by the value of net output of each industry in 1980.

Source: Census of Industrial Production, Annual Reports. 1985 figures constructed with the assistance of the CSO.

output increased at a rapid rate of 3.8 per cent between 1973 and 1978, but slowed to 2.0 per cent between 1978 and 1985. Because of the restrictions on increasing milk output since 1984, and the generally unfavourable outlook for farming due to current changes in the EEC's Common Agricultural Policy, no growth in total farm output is foreseen until the end of the decade (NESC, 1986). Subsequent event suggest that even this may be optimistic. There may be some scope for growth in the volume of throughput in individual industries, but in aggregate employment will only be maintained in the primary processing sector if there is a significant shift into more labour-intensive forms of value added processing.

In the secondary manufacturing sector, output is not constrained by the availability of raw material output from Irish farms. The ability of industries in this sector to increase employment depends on their overall competitiveness in meeting market requirements. Indeed, the action needed to remove the constraints on overcoming competitive weaknesses in this sector is very similar to the action required to get more "manufacturing" activity in the processing sector. In the next section the competitive position of the Irish food industry is examined in a European context.

## 2. The Competitive Position of the Irish Food Industry

Some basic data on the relative size structure of Irish and European food firms are given in Table 4. The statistics in this and other tables in this section are given with respect to enterprises in contrast to the establishment basis of the previous tables unless otherwise stated. An enterprise, which may comprise one or more establishments, is equivalent to a company or firm. Only enterprises with more than 20 employees are covered in the tables which follow.

Food companies in both Ireland and the EEC are much larger, in terms of turnover, than the average for all manufacturing firms. Irish food companies are also relatively larger in employment terms, although in the EEC as a whole the reverse is the case. Measured in terms of turnover, the average size of the Irish food firm is 87 per cent of the EC-9 average (only 66 per cent for manufacturing companies in general). The most striking finding is that the average size of company in many food industries in Ireland compares favourably with the EC-9 average (meat processing, dairying, fruit and vegetable processing, grain milling, cocoa and sugar confectionery, miscellaneous foods). On the other hand, in the oils and fats, fish processing, bakery and animal feed industries there are clear disparities in average size of firm between this country and elsewhere.

Employment data by size of establishment (although not the best indicator of the size of firm in business or financial terms) confirm that Ireland is not unduly out of line with other countries. According to the lastest Eurostat data for the year 1978/79, average plant size in the Irish food, drink and tobacco industry was exceeded only in Denmark and probably the UK (data for the latter country are not available). Furthermore, the proportion of employees in plants employing more than 500 employees was equal to the proportion in the Netherlands, Germany and Denmark and exceeded only by the UK (Table 5). For a number of reasons these figures may present an over-favourable picture of the Irish food industry. The greater importance of drink and tobacco firms in the Irish industry, with their larger average employment levels, has influenced the irish figure. Further, as stated above the ownership concentration might be greater in other countries. Finally, the use of employment as the indicator of plant size tends to increase the relative size of plants with lower labour productivity.

None the less, these figures suggest that the size structure of the Irish food industry is not particularly unfavourable compared to its competitors, although further concentration may well be desirable. Other

## TABLE 4: Relative Size Structure of Irish and EC-9 Food and Drink Companies, 1982

| | Ireland | | EC-9 | |
| Sector | Turnover (mECU) | Employment (No.) | Turnover (mECU) | Employment (No.) |
|---|---|---|---|---|
| | | average per enterprise | | |
| Oils/fats | 15.9 | 137 | 57.3 | 217 |
| Meat | 17.5 | 120 | 15.8 | 126 |
| Dairy | 31.6 | 187 | 34.4 | 179 |
| Fruit/veg | 14.0 | 179 | 12.4 | 144 |
| Fish | 3.0 | 52 | 12.4 | 152 |
| Milling | 17.3 | 149 | 19.5 | 75 |
| Bakery | 2.7 | -89 | 5.6 | 128 |
| Sugar | n.a. | n.a. | 90.3 | 504 |
| Sugar confect. | 26.3 | 356 | 23.2 | 278 |
| Feeds | 8.3 | 50 | 23.2 | 86 |
| Miscellaneous | 24.4 | 114 | 25.9 | 218 |
| Food, drink, tobacco | 18.4 | 146 | 21.1 | 159 |
| Manufacturing | 8.3 | 107 | 12.6 | 166 |

Source: Eurostat, Structure and Activity of Industry, 1982/83. For reasons of data availability, the EC-9 average is based on fewer than 9 countries in the case of some industries.

**TABLE 5: Establishment Size in the EEC Food, Drink and Tobacco Industry, 1978/79**

| Country | Average Number of Employees | Percentage of Employees in Plants with Over 500 Employees |
|---------|---------|---------|
| Ireland | 101 | 33 |
| Netherlands | 78 | 32 |
| Denmark | 135 | 34 |
| Germany | 68 | 26 |
| UK | n.a. | 43 |
| France | 79 | 23 |
| Belgium | 65 | 20 |
| Italy | 74 | 23 |

Source: Eurostat 1985.

countries can support a variety of smaller food firms because of their close relationship with a sizeable home market. For Irish firms, increased market penetration generally means exporting, and the average size of exporting firms will generally be greater than average firm size in the industry as a whole. Despite these caveats, it may be that increasing firm size is too often seen as a panacea for marketing problems when the real constraints lie elsewehere.

A wide range of factors influence the competitive position of Irish food firms in the international market place. After looking at a number of cost factors such as manufacturing, packaging, energy, logistics and marketing, the Telesis Report (NESC, 1982) concluded:

The most significant barriers to Irish exports lie in high packaging and energy costs, high internal logistics costs within foreign country markets, and the difficulty of creating a successful brand image in other countries . . . As a result of these barriers, most Irish food exports are either in bulk beef and dairy commodities or come from the Irish installations of multinational companies which can overcome the logistics and dis-

tribution problems through their elaborate networks abroad. (p. 107).

Unfortunately, many of these cost disadvantages still persist. O'Reilly (1986) provides evidence that Irish energy, transport and telephone charges are much higher than elsewhere in the EEC. Transport costs are a particular problem. Because of our peripheral location and small home market, high transport costs are involved in importing raw materials where this is necessary, but more importantly in exporting finished goods. On top of this, charges are high because of fuel prices, insurance, etc. Interest rates are also much higher in Ireland than elsewhere. Indeed at the present time, it is very difficult to find investments in the food industry which will yield anything like the virtually riskless returns to investing in government gilts.

One aspect of competitiveness which is the focus of some interest is relative labour costs in Irish and overseas firms. Table 6 gives more detailed information on turnover per employee and labour costs on an industry basis. Information on the UK food industry is included in this table because it is the Irish food industry's main competitor. Labour costs include not only wages and salaries but also other pay-related costs borne by employers.

Looking first at labour costs per employee, Irish labour costs in the food industry in 1982 were 9 per cent higher than those in the UK but about 15 per cent lower than in the EC-9 as a whole. Food industry labour costs exceeded those for all manufacturing in Ireland in contrast to the common experience elsewhere. On an individual industry basis, the pattern of Irish labour costs apears similar to that in the UK. In the case of oils and fats, fish processing, grain milling and animal feeds, the differences favoured Ireland, while Irish labour costs were somewhat higher than in the UK in dairying, fruit and vegetable processing, sugar confectionery and brewing. These comparisons are made only for a single

**TABLE 6: Turnover per Employee and Labour Costs in the Irish, UK and EC-9 Food Industies, 1982**

| Sector | Turnover per Employee | | | Labour Costs per Employee | | |
|--------|---------|---------|---------|---------|---------|---------|
| | Ireland | UK | EC-9 | Ireland | UK | EC-9 |
| | ('000 ECU per Employee) | | | ('000 ECU per Employee) | | |
| Oils/fats | 107.0 | 212.3 | 239.1 | 14.8 | 15.9 | 20.8 |
| Meat | 143.0 | 64.4 | 117.6 | 11.3 | 10.7 | 14.2 |
| Dairy | 149.9 | 158.2 | 175.0 | 15.0 | 13.6 | 17.3 |
| Fruit/veg. | 65.9 | 75.5 | 86.0 | 14.1 | 12.3 | 14.1 |
| Fish | 55.5 | 47.5 | 95.1 | 7.3 | 9.5 | 17.2 |
| Milling | 113.7 | 243.6 | 247.8 | 13.4 | 16.6 | 19.4 |
| Bakery | 29.8 | 34.3 | 39.8 | 10.7 | 10.0 | 12.0 |
| Sugar | n.a. | 182.3 | 172.6 | n.a. | 18.9 | 21.7 |
| Sugar confect. | 64.9 | 57.4 | 71.2 | 14.0 | 12.8 | 15.3 |
| Feeds | 152.0 | 198.1 | 231.0 | 12.2 | 16.0 | 18.3 |
| Miscellaneous | 210.3 | 85.3 | 107.5 | 13.9 | 13.2 | 16.0 |
| Distilling | n.a | 154.3 | 159.1 | n.a. | 14.6 | 19.3 |
| Brewing | 165.5 | 147.1 | 110.2 | 21.1 | 18.0 | 20.3 |
| Soft drinks | n.a. | 83.8 | 88.4 | n.a. | 12.4 | 16.8 |
| Food, drink, tobacco | 117.7 | 98.6 | 122.1 | 14.0 | 12.8 | 16.1 |
| Manufacturing | 73.6 | 59.7 | 69.8 | 12.7 | 14.0 | 17.2 |

Source: Authors' calculations based on Eurostat, op. cit.

year and so must be treated cautiously, as they can be influenced by the timing of wage settlements, exchange rate changes, etc.

Turnover per employee in Ireland is generally below the average EC-9 level (meat processing, miscellaneous foods and brewing being exceptions), but on average is above the UK figure. At an industry level a more varied pattern emerges. Turnover per employee is well below the UK average in the case of oils and fats, fruit and vegetable processing, grain milling and animal feeds, and somewhat below the UK level in bakery products and dairying. It is above the UK level in meat processing, fish processing, brewing and in miscellaneous foods (as noted earlier, this latter has a very heterogeneous product mix which probably differs greatly from the composition of the sector elsewhere).

Trends in unit wage costs over time are sometimes used to draw conclusions about changes in labour cost competitiveness between countries. A focus on labour cost competitiveness does not imply that labour costs are the only, or even the main, factor in the competitive position of a food firm. In most food industries labour costs account for a relatively small proportion of the value of total output, However, if labour cost competitiveness is disimproving, this puts added stress on the need to secure savings and efficiencies in other aspects of food manufacturing, and vice versa.

Unit wage costs are normally defined as wage costs per unit of output. Here we define them to be wage costs per ECU of turnover (Table 6). This has the advantage that the resulting trends are not influenced by exchange rate movements which have been substantial during the period covered. The figures show that Ireland has a competitive disadvantage in labour costs in oils and fats, fruit and vegetable processing, grain milling and milk processing industries, and a

competitive advantage in meat processing, fish processing and miscellaneous foods.

The trends in unit wage costs over time are shown in Table 7 for the latest years available. Even though the figures are somewhat out of date, they still give some idea of changes in labour competitiveness for different Irish industries. In interpreting the changes in relative unit wage costs in this table, figures greater than 100 imply that Ireland's labour cost competitive position has deteriorated, while figures less than 100 imply that it has improved. The position for the food and drink industry in general is that it has suffered some deterioration in its labour cost competitiveness over the period shown, more so against the EC-9 than against the UK, and has fared somewhat worse than manufacturing as a whole. In only three industries — fish processing, animal feeds and miscellaneous foods — was there an unambiguous improvement in labour cost competitiveness. Significant disimprovement was recorded in the case of meat, dairy products (particularly against the UK), fruit and vegetable processing, bakery products and cocoa and sugar confectionery products.

The data on Ireland's share of total EC-9 production in the various food industries show that the food sector, in total, increased its share of the value of European production over the period 1975-81. There is some evidence from the table that increasing production share is more difficult when labour cost competitiveness is decreasing, but the correlation is not a strong one.

Costs are only one element in competitiveness. Product competitiveness, encompassing product innovation and marketing skills, is also an important element, particularly in the food industry. The weaknesses of Irish food firms in this area have been documented in many reports, and do not need to be laboured here. There is

## TABLE 7: Labour Cost Competitiveness and Changes in Market Share

| | Relative Unit Wage Costs, 1982 Ireland = 100 | | | Change in Relative Unit Wage Costs 1975-82 | | Irish Production Share | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 1975 | 1981 | |
| | Ire | UK | EC-9 | Ire/UK | Ire/EC | % | % | % |
| Oils/fats | 100 | 54 | 63 | 87 | 120 | 1.0 | | 0.7 |
| Meat | 100 | 210 | 152 | 106 | 117 | 4.0 | | 3.7 |
| Dairy | 100 | 86 | 99 | 162 | 126 | 3.3 | | 3.7 |
| Fruit/veg. | 100 | 76 | 77 | 105 | 113 | 1.4 | | 1.2 |
| Fish | 100 | 153 | 138 | 85 | 87 | 0.9 | | 0.9 |
| Milling | 100 | 58 | 66 | 111 | 104 | 2.4 | | 2.0 |
| Bakery | 100 | 81 | 83 | 136 | 134 | 2.6 | | 1.9 |
| Sugar | | n.a. | | n.a. | | | n.a | |
| Sugar confect. | 100 | 103 | 93 | 110 | 122 | 3.6 | | 2.8 |
| Feeds | 100 | 101 | 99 | 67 | 63 | 1.2 | | 1.3 |
| Miscellaneous | 100 | 223 | 215 | 83 | 78 | 0.4 | | 2.0 |
| Distilling | | n.a. | | n.a. | | | n.a. | |
| Brewing | 100 | 96 | 144 | 102 | 102 | 3.4 | | 5.1 |
| Soft drinks | | n.a. | | n.a. | | | n.a. | |
| Food, drink tobacco | 100 | 109 | 111 | 106 | 109 | 2.2 | | 2.4 |
| Manufacturing | 100 | 136 | 143 | 102 | 106 | 0.7 | | 0.9 |

*Source:* Authors' calculations based on Eurostat statistics. Production share data were not available for 1982.

of course, a connection between cost competitiveness and product competitiveness in that the low profitability of many food firms implies a lack of resources to put towards improving product competitiveness. None the less, the "culture" of product competitiveness is not yet as widespread as it should be. Various government schemes have been introduced to overcome these weaknesses by providing assistance for product and market development, but their impact has been more limited than one would have wished (see the discussion in the Four-Year Plan for Agriculture, 1984, Chapter 8). The new Food Section in the Department of Agriculture and Food has the situation under review and will be coming forward with proposals in the near future.

Considerable structural changes in the food industry are already underway. Following a programme of acquisitions and with considerable assistance from IDA funds, beef processing is now heavily concentrated in a single private sector firm. Concentration should improve the ability of the beef industry to market overseas, although there is an obvious danger that at a local level the lack of competition between processors could rebound to the disadvantage of farmer suppliers.

The national co-operative organisation, ICOS, has been trying to encourage a similar process of concentration in the dairy industry with a view to the marketing of high value added milk products directly to supermarket chains abroad. Some of the larger co-ops have already been successful in this and it is hoped that further concentration will strengthen their market power. As in the case of the beef industry, increased concentration means reduced choice for milk suppliers at the local level, although the co-operative nature of the dairy industry gives suppliers in this instance some countervailing power.

Employment in the food industry can only be maintained and expanded in the years ahead if the different activities can compete with the rest of the European food industry. Three factors which affect this ability to compete have been discussed in this section. First it is sometimes argued that the Irish food industry is handicapped by its small size of operations which makes it difficult to find the resources needed to enter and sustain a presence in the European food market. Evidence presented above shows that, for a range of food industries, Irish firms, on average, are not appreciably smaller than those in other EEC countries. Although average size is similar, it is possible that the size structure could be different, with a small number of

very large firms and a larger number of small firms as in other countries. The size of exporting firms may also be different from the average firm size in an industry. Further research to clarify the importance of this issue would be useful.

Second, the importance of various cost factors in inhibiting the competitiveness of value-added production has been highlighted. In the food industries, high transport, energy and packaging costs have a particularly adverse role. Trends in labour cost competitiveness were also examined, and it was concluded that adverse trends in this cost factor had also made an increase in Ireland's share of EEC producton more difficult.

Finally, the role of product competitiveness and the need to devote additional resources to innovation and marketing in the food industry has been stressed. In the light of the limited effectiveness of the various State incentive schemes in this area to date, there is a need to revise them to ensure a greater impact.

In addition to measures to improve the industry's overall competitiveness, it will also be necessary to tackle some of the more specific structural constraints which inhibit expansion in particular sectors. Some of the more important of these constraints are reviewed in the following sections.

## 3. The Beef Processing Industry

The potential for expanding output and employment is greater in the Irish beef processing industry than in any of the other food sectors. Apart from the extra output and jobs which could be created by expanding cattle numbers, there is considerable scope for improvement from the existing herd by moving into more value added processing. The figures in Table 8 which show the net output and employment generated in different stages of processing give an indication of the potential for growth in the industry. Indeed, various writers (Riordan, 1984(a); McCarrick, 1985; Kelly, 1984; Sectoral Consultative Committee, 1984) have stated that if more forequarter beef was used to make burgers and other beef-based products employment and added value in the industry could be doubled. This is a very substantial increase and we must ask why such a level is not being obtained at present.

The following constraints can be listed:

### 1. Seasonality

Beef production in Ireland is mainly grassed-based, giving rise to a highly seasonal pattern of supply to beef export plants. Over 50 per cent of slaughterings take place in the four months August to November each year, with only about 20 per cent in the four months February to May. Figures in the Four-Year Plan for Agriculture (1984) show that in the three years 1980-1982, 17 per cent of slaughterings took place in October and only 4 per cent in March. This highly seasonal pattern of output is an impediment to optimum use of processing resources with excessive pressure on facilities alternating with under-usage. It is difficult to maintain regular supplies to retail outlets

**TABLE 8: Net Output and Employment in the Beef Industry by Stage of Processing**

| Stage of Processing | Net Output per 1,000 Cattle | Employment per 1,000 Cattle |
|---|---|---|
| | £'000 | Man Years |
| Live exports | 3,1 | 0.2 |
| Carcase beef (bone in) | 44.3 | 2.8 |
| Boneless beef | 132.9 | 7.0 |
| Processed beef | 330.6 | 17.5 |

Source: Calculated from data in Riordan, 1984(a).

under such a system and for that reason Irish meat packers tend to rely heavily on intervention sales or on exports of commodity products to wholesale markets in the Autumn months. The Autumn sales, aided by EEC subventions, raise fat cattle prices at that time of year above what they normally would be under free trade. This in turn raises store cattle prices. Imports into the EEC from third countries in the Spring months tend to depress cattle prices at that time of year. The dual effect of raised Autumn and reduced Spring prices tends to make Winter fattening uneconomic in countries like Ireland where there is a very large cost difference between Winter and Summer production.

Various methods of dealing with the seasonality problem have been suggested from time to time, such as variation of intervention price levels on a seasonal basis, arranging contracts between farmers and factories and the organisation of cattle producer groups, as in Brittany in France.

Seasonal variation of the intervention price, even if it could be arranged in Brussels, would be of little help unless Autumn intervention prices and export refunds were drastically reduced. Normally, support prices are only needed in the Autumn months at the end of the grazing season and most EEC producers will fight for the highest possible support price for beef at this time. But so long as Autumn support is available, the tendency in Ireland will be to fatten cattle off grass at this time rather than off expensive meals in Winter.

The arrangement of contracts between farmers and factories has not been successful in the past, and likely never will be. The variation in cattle prices can be so great both seasonality and from year to year that neither farmers nor factories can commit themselves to a fixed price contract. Many factories would be glad to make variable price contracts but farmers are not greatly interested in such contracts. They feel they can gain from playing the market in Spring when fat cattle are scarce.

The alternative to contracts is the formation of producer groups whose members would fatten cattle over Winter for sale in Spring. Large groups of this kind have a good deal of market power and can obtain the best possible prices for their cattle (Joyce et al., 1980). Several producer groups were formed in Ireland during the past ten years, but of these, only one group now remains. It seems that Irish farmers prefer to do their own selling rather than having it done on a group basis.

Despite the reluctance by farmers to form producer groups, every effort should be made by The Agricultural Advisory Service (ACOT) and by the Co-Operative Movement (ICOS) to organise such groups and to do some hand holding in the early years. To improve Spring prices, disease levies should not be charged on cattle slaughtered in the first six months of the year. All of the levies should be charged on those slaughtered in the July/December period. The import of calves from Great Britain should also be allowed so as to increase cattle numbers and possibly improve the seasonality situation.

## 2. *Competition Between Live and Dead Trade*

There is a considerable degree of competition be-tween beef exporters and live exporters for available supplies of cattle. For many years live cattle exporters enjoyed a level of support from the Common Agricultural Policy (CAP) which gave them a considerable competitive advantage over beef exports in terms of prices they were able to offer producers for their cattle. Since 1982, however, as a result of successful lobbying by Irish processors, the balance of advantage from all EEC supports has swung in favour of beef exports. Live exports which in 1978 accounted for 30 per cent of cattle output, have now fallen to less than 20 per cent of this total and the trend seems to be for further declines.

## 3. *Annual Variations in Supplies*

The cyclical nature of cattle production and the level of competition for available supplies from live exporters can cause severe annual fluctuations in the level of cattle available to beef export plants and consequently in their throughput. This constrains those involved in the industry from planning production and marketing effectively from year to year. For example, the number of cattle slaughtered at beef export premises declined from 1.364 million in 1975 to 965,000 in 1976, rose to 1.372 million in 1980, dropped to 884,000 in 1981 and then rose to 1.254 million in 1985. This situation is, of course, not peculiar to Ireland. The cattle cycle is world wide, but it can be more severe in Ireland because, for veterinary reasons, we do *not allow* the import of live animals or beef from outside the island to even out fluctuations. It seems, therefore, that the time has come when serious consideration must be given to allowing imports of calves from Britain. On the surface it would seem that a case could also be made for the import of processing beef as well. Such imports would, however, depress Spring cattle prices and thus interfere with the continuity of supply of high quality beef to retail outlets at home and abroad. The latter is a valuable trade built up in recent years and according to the Sectoral Consultative Committee Report on Beef (1984) the national interest would best be served by channelling a greater proportion of our beef into this trade.

## 4. *Supply of Cattle*

The most serious problem now facing the industry is the supply of cattle in future years. With milk output curtailed, the supply of calves from this source will be reduced. It is imperative, therefore, that steps be taken to increase the beef cow herd over the coming years.

Various studies (see Hickey, Connolly and Riordan 1980), and indeed common experience, have shown that beef production is not a very profitable enterprise and for this reason a number of cattle headage grants, funded partially by the EEC and the Irish government are in operation *(Specially for the Farmer (1987))*. As these payments have not succeeded in maintaining existing beef cow levels, the Minister has recently suggested the introduction of a new £6.25 million scheme to maintain the national cow herd (Department of Agriculture and Food 164/87). This scheme which was to have been funded jointly by the Department of Agriculture, the beef processors and the banks, has now

run into difficulties due to lack of government funds. It is hoped, however, that it can be rescued. Without some such scheme it will be difficult to maintain employment in the beef processing industry, much less increase it.

## 5. EEC Beef Support System

The EEC Beef Support System (including the UK variable premium) has had a key influence on the product mix and market distribution of Irish beef since our accession to the EEC in 1973. While the System is credited with the limited expansion of the Irish beef industry which occurred in the period 1973 to 1985, certain aspects of its operation have tended to prevent the industry from realising its full growth potential. In particular, intervention has provided a low risk outlet for commodity type products and thereby reduced the incentive for beef plants to get involved in the riskier, but ultimately more beneficial, market for high value added products. Against this, it should be stated that the boning out trade has benefited considerably from the intervention process and may suffer if intervention is curtailed as is now likely.

More serious impediments to the beef processing sector in recent years have been the operation of the Monetary Compensatory Amounts (MCAs), (particularly since Sterling became weak), export refunds, the UK variable premium scheme, the concessionary import programme of the EEC and certain national barriers to trade in processed meats which are allowed by EEC rules. We look at the operation of each of these mechanisms in turn.[1]

a. *Monetary compensatory amounts*[2] There are two anomalies in relation to the method of applying MCAs in the processed beef sector:

(1) The coefficients used to derive the MCAs for processed beef do not adequately reflect the meat content of the product and

(2) The system does not apply to beef products which contain less than 40 per cent beef.

In regard to (1), it is only the chemical lean content of the beef which is taken into account in calculating MCAs. The fat content is ignored. This results in a penalty on the exporter of the processed product relative to the exorter of bone-in or boneless beef when an MCA subsidy is payable on exports as is now the case on exports to the UK.[3] At the present time when the Irish and UK MCAs are −2.0 per cent and −8.7 per cent, respectively, and the Irish pound is equivalent to Stg. 89.5p., the net MCA subsidy on a chilled boneless forequarter weighing 105 lb exported to the UK is IR8.92p per lb or a total subsidy of IR£9.37. If this beef were processed into a product containing 96 per cent beef the net MCA subsidy payable would be only IR£4.68 so that on a single forequarter valued ex factory at IR£75 the exporter of boneless beef has a clear advantage of IR£4.69 over the operator who processes the beef in Ireland. Moreover, the Irish processor must then compete on the UK market against processed

products which have been produced from Irish raw materials benefiting from the MCA subsidy. Processed products with a lower percentage of meat suffer a greater disadvantage and as stated above, no subsidy at all is paid on products containing less than 40 per cent beef.

b. *Export refunds:* The export refund on processed beef does not take sufficient account of the meat content of these products. The result is that it is more profitable to export beef in bone-in or boneless form to third countries rather than as processed beef.

The following example illustrates the position at the present time. A fresh/chilled boneless forequarter weighing 105 lb exported to North Africa would attract a net export refund (after MCA payment) of IR£57.07. If this quarter were processed into a product containing 96 per cent beef, the product would attract a refund of IR£30.06 only. There is thus no incentive for an Irish processor to export processed beef to third countries, but the anomaly has an even more serious consequence. It gives third country processors a competitive edge over their Community counterparts. The former can import their raw materials cheaply with the aid of EEC subsidies and thus undersell EEC processors who have received very low levels of refund.

c. *UK variable premium (VP):* The variable premium is the principal price support measure for beef in Britain and Northern Ireland. The UK allows market prices for prime cattle (steers and heifers) to find their own level while returns to producers are safeguarded by the payment to them of a premium equal to the difference between the market price and a predetermined target price. The premium is clawed back on UK beef sold into intervention or on exports of beef and live cattle. The scheme is financed 40 per cent by the EEC and 60 per cent by the UK Exchequer.

Ireland enjoys a special position under the Variable Premium Scheme. Prime cattle (steers and heifers) exported live to the UK are eligible for the variable premium there and Ireland also receives the Variable Premium on exports of eligible fresh and chilled beef sent to the UK.[4] The variable premium is not, however, paid on Irish exports to the UK of processed beef products. Hence, if an Irish exporter sends processed beef to the UK he must forgo payment of the premium and at the same time compete against UK domestic production which has attracted the premium on cattle slaughtered there or on fresh/chilled beef imported from Ireland.

Since cows do not attract the variable premium, the system is broadly neutral in respect of processed cow beef. There is, however, a substantial amount of beef

1. The examples in this section are taken from a recent publication by the Irish Meat Exporters Association (1987) and from Riordan (1984(a) and 1984(b)).
2. For definitions of MCAs, see Appendix.
3. Exports to other EEC countries or to third countries are not affected to anything like the same extent. Also, the anomaly only arises when, as at present, the UK has a large negative MCA.
4. The maximum limit is currently 18.66p stg. per kg carcase weight.

processed from the cheaper cuts of prime cattle. Only about 80 per cent of a boneless carcase can go into high priced vacuum-packed cuts. The remaining 20 per cent has to be sold as frozen flaps or as processed beef.

The competitive disadvantage resulting form processing beef from prime cattle in Ireland as against the UK is substantial in value terms. At the present time it amounts to about 7p per lb as a result of the variable premium and when the effect of the MCA anomaly, described above, is added there is an advantage of about 11.5p/lb in favour of exporting fresh/chilled boneless Irish beef to the UK for processing there instead conducting that processing in Ireland.

d. *Concessionary imports:* Between cattle and beef, the EEC imports the equivalent of 450,000 tonnes of beef each year. Most of this enters the EEC at substantially reduced rates of import levy and customs duty. While concessionary imports in general depress EEC prices, certain concessions have a particularly negative effect on the development of the Irish processing trade. This happens because of the fact that such imports do not enter Ireland for veterinary reasons, but are available at very low prices to processors in the UK and other EEC countries, notably Germany.

There is also a canned meat concession under which countries outside the EEC are permitted access to EEC markets for unlimited quantities of canned meat at a zero rate of of import levy and 26 per cent customs duty only. The principal countries of supply are South American. The main importers are the UK, Germany and Italy. Imports are in the region of 150,000 tonnes annually. It has been almost impossible for Irish canners to compete with these imports.

As part of the 1987 EEC price package, MCAs were allowed in principle on cooked meats, the details to be worked out by the Beef Management Committee. When the Committee met subsequently it was discovered that there were practical difficulties in imposing MCAs on such meats within the Community. Germany, for example, a country with positive MCAs, could import canned meat from third countries under a GATT agreement and export it with the aid of a large MCA subsidy to England. It was decided, therefore, that MCAs should not be imposed on canned meats, but as a quid pro quo, during periods when sterling is depreciated, Irish processors are to be allowed to purchase beef for canning at cheap rates out of intervention. This arrangement should help to remove the canning anomaly which has been in existence for some years — since sterlnig became weak.

e. *National trade barriers:* Trade in beef within the EEC is governed by the Fresh Meat Directive (83/90). This Directive only covers meat portions which are greater than 100 grammes in weight. Portions lighter than this are outside the scope of the Directive and inter-country trade in such meats is not covered by EEC rules; it takes place on the basis of bilateral agreements. Ireland has a long-standing bilateral agreement with the UK which allows us to export hamburgers and sausages to that country. We have no such agreement with any other EEC country and it will be difficult to get one. Up to quite recently all minced meat sold in France had to be minced in front of the customer so that he or she could see exactly what was included in the mince. More recently, a few large factories in France have been licenced to manufacture hamburgers under constant veterinary inspection but it is hard to see how an Irish factory could get such a licence. The prospects, therefore, for exporting uncooked processed beef to the Continent are not very good. Nevertheless, we should try and make bilateral agreements with countries other than the UK where agri-monetary rules might be more favourable.

*Overcoming Anomalies in the EEC Beef Support System*

When all the provisions of the Single European Act (SEA) are enforced, most of the anomalies mentioned above will disappear but judging by the difficulties encountered to date in removing national barriers to trade the full implementation of the SEA is a long way down the road. In the meantime the Irish Government must tackle the different problems in a piecemeal fashion.

(a) *MCA Anomalies:* It is impossible for Ireland to develop a processed beef industry while MCA anomalies of the kind mentioned above remain. Every effort must therefore be made to have these anomalies removed. This becomes vitally important as we move into the production and export of high quality beef cuts to retail outlets. As stated above, over 20 per cent of a boned-out carcase is not suitable for such cuts and this meat has to be processed in some form. The EEC has set a deadline of 1992 for the abolition of all MCAs and if this can be achieved it willl be a great help to Irish beef processors.

(b) *Export Refunds:* What has been said above about MCA anomalies applies with equal force to export refunds. To correct the imbalance, the refunds on processed beef need to be reviewed so that proper account is taken of meat yields. The government must continue to press for such review. Currently, there are hardly any exports of processed beef to third countries while there are substantial exports to these countries of frozen boneless beef suitable for processing.

(c) *UK Variable Premium:* The difficulties arising from the application of the variable premium will be very difficult to solve. The best way of dealing with them would be to remove the variable premium entirely, as the EEC Commission would like to do, but this is unlikely to happen for many years to come. The UK Government has great power in Brussels and its will in regard to the variable premium is likely to prevail for the time being at least.

Because the premium applies basically to prime cattle at point of slaughter, the UK authorities will only apply it to Irish beef coming from such cattle and the beef must be recognisable and certified as such. Hence, frozen and processed beef are not deemed eligible for

the premium: such beef could come from cows and indeed a high proportion of it does. It is, therefore, very difficult to devise a formula for the payment of the premium on processed beef. All that can be done is to try and persuade the UK authorities to pay it on the meat content of processed and canned beef certified by the Irish Government as being manufactured from prime cattle. This concession will not be easily obtained and we cannot press too strongly for it since exports of processed beef to the UK are the subject of a bilateral agreement which could be revoked. However, as the provisions of the SEA come into force considerable pressure will be placed on the UK to dismantle this barrier to free trade.

(d) *Concessionary Imports:* Many of the concessionary import arrangements are bound in GATT, the Lomé Convention, or the Yugoslav Protocol and must continue with possibly minor changes. The others, which are decided by the EEC Council of Ministers, are usually based on reciprocal arrangements with other countries and would be equally difficult to dismantle. We must, therefore, learn to live with these arrangements for the time being. The dairy quota will inevitably reduce the supply of beef in Europe and when that happens the effect of the imports will not be so severe. In the long run, however, it is hard to see how a worthwhile processed beef export trade can develop in Ireland in face of such cheap imports by competing countries.

*Projected Employment*

If the government can succeed in maintaining the cow herd at existing levels and in getting round some of the more serious of the price support anomalies mentioned above, some increase in employment in beef proceesing should be possible. There is a definite movement into vacuum-packed products and the aim must be to process the cuts not suitable for this trade. However, because of the rapid structural change currently under way in the industry, considerable increases in labour productivity must also be expected. This will make the target of 1,000 additional jobs in the *Programme for National Recovery* difficult to achieve.

## 4. Other Industries

*Milk Processing*

In the period 1972 to 1984 the supply of manufacturing milk almost doubled but despite this increase the numbers employed in the processing industry (including liquid milk delivery) declined. Employment rose slightly from 9,600 in 1974 to 10,200 in 1978, but dropped to 8,500 in 1985. With increased milk supplies now effectively choked off by the super levy, it is difficult to see how this decline can be halted; the only hope lies in raising value added in the industry by increasing the production of the more highly priced products such as yoghurts, milk liqueurs, coffee creaming agents and soft cheeses which at present use very little milk.

The difficulties of doing this are, however, pretty formidable. The Irish industry faces a number of constraints not encountered by most of the other EEC countries. Among these, by far the most serious is the seasonal nature of our milk supply; which gives rise in turn to such problems as restricted product mix, plant over capacity and high capital costs per unit of output. We look at these constraints in turn.

*Restricted product mix:* Ireland has the highest peak to trough milk supply ratio in the EEC — about 10 : 1 on a weekly basis compared with an EEC average of about 2 : 1. Because of this seasonality pattern, developments in the Irish dairy industry are very much related to bulk products like butter and hard cheese which can be stored. Products with short shelf lives are not favoured due to the difficulty of maintaining supplies the whole year round.

Ireland's main milk products are butter, cream, cheese, whole milk powder and chocolate crumb. In 1985 some 72 per cent of manufacturing milk was used for the production of butter, one of the main intervention products, and only 15 per cent for the manufacture of cheese. In 1972 the proportions going into these products were 67 and 18 per cent, respectively. There has thus been a disimprovement in the situation over the years. Nor is this surprising considering the availability of intervention and export refunds for butter and its by-product skim milk powder.

*Plant over-capacity and high capital costs:* Following EEC membership, the milk processing industry, aided by EEC and IDA grants, set about ensuring that it had sufficient capacity to cater for peak period supply. This has resulted in considerable over-capacity in the Winter months when supplies are scarce. A report by J. and E. Davy (1986) says that drying plants operate for only about 30 weeks in the year, butter plants for 45, cheese plants for 26 and casein plants for 30 weeks. Not alone this, but the industry banked on a much faster growth in production than, in fact, occurred and now finds itself with spare capacity even at peak periods.

The cost of the modernisation programme together with a decline in real product prices has led to a severe squeeze on margins over the past decade. This situation has not been helped by pressure from producers for higher prices, wars between co-ops for scarce supplies and battles for increased shares of the domestic market involving large discounts to the retail trade. To make matters worse, there is a low level of equity investment by producers so that capital spending is associated with high debt service costs. As a result, some co-ops have gone, or are about to go, outside the farming sector for equity funds.

*Future outlook:* The future of the milk processing industry depends very much on what happens to the CAP support programme. While intervention and the export refund system remain in operation the industry will continue to produce butter and skim milk powder. If, however, intervention is suspended or limited by quota as is now suggested, the industry will then have to diversify into products for direct sale to consumers.

Such diversion can only happen if the peak/trough production ratio is reduced substantially by increasing

incentive payments for off-peak production. Keane (1986) says that a differential of about 16p per gallon is necessary to bring about any major shift in seasonality and it is interesting to note that some of the larger co-ops which are diversifying into consumer products are paying this amount and sometimes more. In a recent RTE television programme (28/5/87) the manager of Waterford Co-op said that his company was paying a differentialy of 20p per gallon for Winter milk and could afford to do so because of the range of products produced.

On the basis of this experience and of what is happening in other co-ops, there are some grounds for optimism. As milk output within the EEC is reduced and the intervention system is threatened, attention is turning away from commodities and towards value added products. The transition will, of course, be slow and in the process (as stated above) many of the smaller co-ops will be absorbed into the larger ones. As suggested for beef cattle, some assistance might be given by confining statutory deductions from the milk price to Summer milk production. It is unlikely, however, that year-round value added processing will increase employment in the industry. It will be a significant achievement to maintain existing levels.

## Pig Processing

Pig output, which accounts for about 6 per cent of gross agricultural output, has remained fairly static at around 2 million pigs (135,000 tonnes pigmeat) per annum over the past 20 years. Production has, however, undergone a significant structural change in that period. The number of producers has declined from 110,000 in 1970 to about 7,000 in 1985 and this decline has led to a rise in the concentration of production and to an increase in productivity.

There are problems, however, in regard to efficiency. Because of our damp climate and peripheral location, the price of pigmeal in Ireland is much higher than in European countries (AFT, 1987). This tends to make pig production less profitable than grass-based enterprises like dairying. Now that dairying is curtailed by quota restrictions, young energetic farmers may look towards pigs as a means of increasing their incomes provided they can obtain planning permission. This is difficult to obtain at present due to slurry disposal problems.

But if pig numbers are to increase, the processing sector must be able to pay producers an economic price for their output. In its present state of organisation, it seems unable to do this. There are problems in relation to hygienic standards in the factories and to the general level of efficiency of these plants. In its 1982 report on the Irish Food Processing Industry, the IDA (1982) said that the UK, which is the principal market for Irish pigmeat, had threatened to cut off imports unless minimum standards of hygiene were enforced by the end of that year (1982). There has been some improvement in standards since then but by all accounts there is still a long way to go (Department of Agriculture, 116/86).

There are also problems in regard to economies of sale. Currently thee are 14 plants licensed by the Department of Agriculture and Food for the slaughtering and processing of pigs for export. In addition, there are several hundred unlicensed pork butchers. IN 1985 the licensed plants slaughtered 1,793,000 pigs or an average of 2,500 pigs per factory per week. This is a very low output by international standards. In Denmark, which is the major pig exporting country in Europe, the average throughput per plant is about 9,000 pigs per week.

The IDA considers that the plant size for optimum production in Ireland should have a capacity to handle at least 6,000 pigs per week and it says that unless the industry can get to that stage of concentration the prospects for regaining lost ground on the UK bacon market are poor. (Exports of bacon to the UK have declined from 28,000 tonnes in 1981 to 10,000 in 1986). Even though pork exports have increased in recent years, only about 28 per cent of total pigmeat production is exported at the present time and a recent forecast has suggested that even this level of exports will decline substantially in future years (Cowan, 1984). Most firms seem interested only in the home market where competition is intense.

But the home market is by no means secure. There is a serious threat from imports over the coming years. Bacon imports have remained fairly static at around 5,000 tonnes per annum during the 1980s but pork imports have gone from 740 tonnes in 1981 to almost 11,000 tonnes in 1986. Practically all the imports come from Northern Ireland but in 1986 over 600 tonnes of bacon were imported from the Netherlands. This development is ominous. The Netherlands has very efficient pig producing and processing industries and it can easily gain a foothold on the Irish bacon market unless home processors put their houses in order and meet the challenge.

The government has a vital role to play in the rejuvenation of the pigmeat processing industry by using grant assistance to bring firms up to some given level of efficiency. According to the programme outlined by the Minister for Agriculture and Food in July 1987 (Development of the Pigmeat Industry, 114/87), three new very large processing plants are in course of construction. These will be involved mainly in the export business and should also provide a profitable market for pigs and thus stimulate extra production. According to the government statement, pig output is targeted to increase to 3 million annually by 1990 from the present level of 2 million.

If the pig output can be increased it should be possible to increase numbers employed in the processing industry. An extra million pigs should give an increase of 1,000 workers as specified in the recent Programme for National Development. Pig production will, however, have to become much more profitable than it is at present if these numbers are to be achieved. The ball is, therefore, very much in the processor's court. They must be able to increase real prices to producers substantially. It would help greatly also if

cheap cereal substitutes could be made available through a deep sea port in the Shannon estuary.

## Sheep

As a result of increases in sheep numbers, exports of mutton and lamb rose from 15,000 to 22,000 tonnes between 1983 and 1986 but the figures available would indicate that there has been little change in the numbers employed in sheep slaughtering over this period. It is expected that sheep numbers will continue to increase over the coming years as a result of the curtailment in milk output and this should give rise to increased employment, both in the slaughtering industry and in fellmongery and tanning.

Sheepmeat is exported in carcase form. Little processing is done to date. One firm in Wexford is now exporting lamb cuts to France and it is believed that some others are about to follow suit. Two firms are getting into the processing of spent ewes with IDA aid. One is manufacturing burgers and cooked mutton meals and the other is contemplating a ewe deboning exercise with a view to the export of primal cuts to Middle Eastern Countries. Both of these firms are still at the test marketing stage and it remains to be seen whether or not their products are economically viable. As there are no export refunds on sheep meat, prices in Middle Eastern Countries will be relatively low. However, the raw material (spent ewes) is becoming increasingly more difficult to dispose of and any reasonable outlet for it wil lbe welcome. A large increase in the numbers employed in sheepmeat processing is not expected but the projection of an increase of 200 people over 5 years, as specified in the recent Programme for National Development is not unrealistic.

## Poultry

Domestic consumption of poultry meat which had increased substantially in the 1970s has now levelled off and exports have declined somewhat over the last few years also. Because of high prices for feeding stuffs, it is difficult to compete with chicken on the UK or continental markets. There are prospects for the export of value added turkey products but the quantities involved, as yet, are relatively small.

## Wild Fish

There has been some increase in output and employment in the fish processing sector in recent years but further increases will depend on very much on the level of the wild fish catch.

Because of scarce supplies and very high prices on the fresh market, white fish processors are going through a bad period at the present time but pelagic processing (mackerel and herring) is tending to expand. A very remunerative market has been found in Japan for herring roe and this discovery has opened up a new processing industry, with the roe going directly for export and the flesh being processed into marinates and other products.

Expansion in this area is very much dependent on the supply of herring and unless current quotas can be increased there is a very definite limit to the amount of roe which can be produced. Quotas come up for review in 1992 and at that time we should be looking for an increased share of stocks in our own territorial waters. During EEC entry negotiations we traded fishing rights in exchange for agricultural benefits. Now that the CAP is being phased out, we should try to get some of these rights back.

There may be some prospects for the processing of non-quota species. Blue whiting, a variety of fish which heretofore has had little commercial value, is now being processed into new products in Norway. This development is still at the experimental stage, but if it proves viable a similar enterprise could be started here. The advantage of blue whiting is that it is plentiful in our waters, is not in demand on the fresh market and can thus be a cheap raw material for a processing industry. It remains to be seen, however, if the processed product (surimi) can be sold profitably.

## Farmed Fish

Fish farming — the artificial rearing of fish — is now a well developed industry in Ireland. The species raised are salmon, trout and shellfish of various kinds. The trout are disposed of mainly in the fresh form but some of the farmed salmon are now being smoked and plans are under way to extend this industry and to develop a trade in pre-packed salmon cutlets. Some 2,500 tonnes of farmed salmon were produced in 1987 and it is expected that this amount will increase to 10,000 tonnes by 1990. The wild salmon catch is only about 1,000 tonnes.

Some 10,000 tonnes of farmed mussels were produced in 1987, over half of which were processed. Plans are under way for the expansion of the mussel processing industry in Bantry and Shannon as well as in Wexford where the current processing industry is mainly located. Developments are also expected in the processing of farmed pacific oysters.

On the whole, the prospects for an expansion of the fish farming industry are good and it is hoped that this expansion will give rise to a significant extension of the fish processing industry. If the output increases expected are realised, employment in both the production and processing of farmed fish could increase by 500 over the coming five years.

## Grain Milling and Animal Feed

The grain milling industry is going through a difficult time. Imports of flour, mainly from Britain and Northern Ireland, have gone from 4,000 tonnes in 1980 to 52,000 tonnes in 1986, and imports now account for almost one-quarter of total flour usage in Ireland. The reasons given for increased imports are high raw material and production costs in Ireland and excess capacity in UK mills due to declining flour consumption in that country. Whatever the reason, there seems little prospect of increased employment in flour milling in the near future. Numbers employed have declined from 1,600 in 1980 to 1,100 in 1985.

Record levels of animal feed were produced in 1986 due to the poor weather in that year. Most of the increased production was dairy feed. In the more normal years expected in future this level will be reduced substantially and further cuts are expected as a result of the milk quota which is tending to push milk producers towards Summer output. Developments in the production of value added milk products (if and when they occur) will cause a swing back to Winter milk production, but this is unlikely to have much effect on employment in the animal feed processing industry. Numbers fell from 2,900 in 1980 to 2,000 in 1985 and further declines seem inevitable.

## Bread and Biscuit Confectionery

This industry has been under severe pressure from imports over the past number of years. Total employment declined from 9,400 in 1980 to 7,200 in 1985 and is expected to decline further in the coming years. The bread sector held its own well up to 1984 when imports were less than 3,000 tonnes per annum; but since then imports have risen to 4,800 tonnes in 1986 (total consumption of bakers bread in that year was about 200,000 tonnes). Most bread imports come from Britain and Northern Ireland where flour is about 13 per cent cheaper than here because of agri-monetary regulations (failure to devalue the UK green pound and no MCA on bread to counteract this low flour price).[5]

The confectionery and the biscuit industries are also under threat from imports but in these sectors the low prices of raw material in the UK are counteracted to some extent by the payment of MCAs on imports. Despite this protection, the confectionery industry is struggling. Imports, currently at around 25,000 tonnes, have risen by more than one-third since 1979 and are likely to rise further as some of the very large, highly efficient, foreign firms gain a foothold on our market. The people doing best here at present are the small firms with low overheads selling directly in their own shops. A number of the larger firms have gone out of production or wound down during the last few years.

The biscuit industry seems to be holding its own fairly well because it is operating in one of the largest and most modern complexes in Europe. Though under pressure from imports, it is expected to hold its share of the home market in future years and perhaps increase exports.

## Fruit and Vegetable Processing

Output in the fruit vegetable processing industry fell during the 1970s but appears to have stabilised since 1980. The problems and constraints on its development were most recently reviewed in the Horticultural Development Group's Report on the Processed Vegetable Industry published in 1982. At that time exports amounted to 7,300 tonnes valued at £8m while imports amounted to 66,700 tonnes valued at £34m. By 1986 exports had grown marginally to 8,200 tonnes valued at

£10.7m while imports had increased to 103,800 tonnes valued at £49.5m. Processed mushrooms and dried vegetables are the principal exports, while frozen vegetables, followed by canned tomatoes and other canned vegetables, are the dominant imports.

Production of frozen foods is a capital-intensive industry which must be carried out on a large scale to be profitable. The market is dominated by multinational firms with established brand names, so a new entrant should probably first aim to supply on a sub-contract or "own label" basis. Returns are low and may not be sufficient to tempt Irish firms into the industry. The supply of frozen chips for the domestic market is one potential opening which a number of firms tried unsuccessfully to fill in the early 1980s. Currently one firm is doing well in Donegal and a Dutch company is about to begin operations in East Cork. It is hoped that these firms will be able to supply the major portion of the home market. The difficulties in ensuring an orderly supply of raw materials is sometimes seen as a constraint, but (apart from potatoes) past experience suggests that farmers are quite willing to grow vegetables under contract for processing. The question of scale is critical to future developments in this area, and new firms established must have an export market capability.

The growing of vegetables is a labour intensive operation and if the industry was more efficiently organised, jobs could be created at the growing end. It is hoped that Bord Glas, the new Horticultural Board, will succeed in sorting things out.

## Sugar, Chocolate and Sugar Confectionery

Employment in these sectors has steadily fallen during the past decade and many jobs remain under threat from lower-priced imports. Sugar production is controlled by EEC quota and currently meets home demand plus a little for export, mainly to Northern Ireland. Sugar wholesale prices are high, and there is a continual incentive for users and retailers to look for cheaper sources of supply, particularly from France. Sugar is also under increasing competition from non-sucrose sweeteners. To meet these threats the Irish Sugar Company must rationalise its production and reduce its costs. Already the Tuam factory has been closed and serious consideration must be given to moving to a two-factory configuration to match continental levels of efficiency.

There is effectively a common sugar and chocolate confectionery market in operation in Ireland and the UK, dominated by a few multinational companies. These companies allocate the production of particular lines for the whole market to particular plants, so there is a lot of intra-industry trade. In 1982 Ireland was a net exporter of both sugar and chocolate confectionery, but by 1986 trade in sugar confectionery had moved into deficit.

Production costs are much higher here than in the UK and some of the low sugar content products are not protected by MCAs. There is thus a strong incentive for some firms to move the location of their production outside the State. It is difficult to be optimistic about

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5. Theoretically there is an MCA on bread but because its value is less than 2.4 per cent of the price of bread, the MCA is not charged.

employment levels in this sector in the short run. Numbers employed have declined from 7,000 in 1980 to about 4,900 in 1985.

### Drinks and Beverages

This is a particularly important sector of the Irish food industry, accounting for a greater proportion of manufacturing employment than in any other EEC country (Scott, 1985). It has undergone a rapid process of rationalisation in recent decades, and is now dominated by a small number of very large firms, some of which are part of multinational groups. Output in the industry has grown in response; first, to the sizeable increase in home consumption of alcohol during the 1970s and, in the 1980s, because of a substantial increase in the level of exports, particularly of spirits and cream liqueurs. As a result, employment in the distilling industry has been growing, although in the other sectors of brewing and soft drinks employment has fallen because of rationalisation and modernisation.

Home market consumption is very influenced by taxation policy towards drink. Real tax levels were increased substantially at the end of the 1970s, and consumption turned down sharply as a result. Cross-border trade in drink, some of it unrecorded, has also affected the level of domestic purchases, although its effect on output and employment levels in the industry is mitigated to the extent that customers continue to purchase Irish-produced drinks north of the border. Although real taxation levels have since been reduced, and despite the relatively low consumption of alcohol in Ireland in volume terms by EEC standards, the real prospects for expansion of the industry must lie on export markets. Here the maintenance of international competitiveness is vital. This in turn will require careful control of costs.

The soft drink sector faces particular MCA-related problems. UK plants can obtain sugar, which accounts for 31 per cent of the final output price, at a price considerably lower than Irish firms because of the failure to devalue fully the UK green pound, yet there is no MCA protection on the final product nor was any proposed by the EEC Commission in the 1987 price package. Imports of soft drinks have increased rapidly since 1984 as a result, and employment in the sector, as well as in the sugar refining industry itself, will be seriously threatened unless a solution is found to this problem.

## 5 Conclusion

The above discussion shows that the prospects of increasing employment in the food and drink industry are not very good. The trend over the past decade has been downward from 57,100 in 1979 to 44,700 in 1986 and while the decline has been slowed somewhat in the last year the analysis of the individual sectors gives little ground for optimism.

The potential for expanding output and employment is much greater in the beef industry than elsewhere but there are two main constraints, namely, the supply of cattle and the operation of the EEC support scheme. Attempts are being made by the government to remove these constraints but progress is slow. Without further improvements in these areas the 1,000 extra jobs by 1992 projected for the industry in the recent Programme for National Development will not be realised.

There is little hope of increasing numbers employed in the milk processing industry but if the proposed reorganisation of the industry takes place, more value added products than at present will be produced and it may be possible to maintain existing numbers.

The prospects for increasing employment in the pig processing industry depends very much on increasing the supply of pigs. If, as the government assumes, pig numbers are increased by 1 million over the coming five years, the numbers employed in the processing industry will increase by 1,000. It will be very difficult, however, to get this increase in pig numbers. High feed prices make it difficult for many farmers to produce pigs competitively at the prices which have prevailed in recent years.

As a result of the EEC sheep policy, sheep numbers are increasing steadily in Ireland and it is expected that numbers employed in the sheepmeat processing industry will increase by 200 by 1992. Another area where some growth is expected is in the production and processing of fish. The increase here is expected to be about 500 over 5 years. Unfortunately no growth is expected in any of the other food industries and the problem wil be to prevent employment in them from declining. There is hope, however, that Bord Glas will sort out the vegetable industry and that employment will be created at the growing end.

The above discussion shows that there are difficulties with the Irish food industry not encountered by the more successful of our competitors. These difficulties might be classified as natural and artificial. Among the natural constraints are:

(1) A small home market which means that if firms wish to expand they must break into very competitive export markets often without the trading experience which the home market can provide.
(2) A peripheral location making for high transport costs both for raw materials and finished products.
(3) A damp climate suitable for grass but not very suitable for grain growing except in certain areas. Our principal outputs, therefore, are grass-based products like milk and beef produced mainly in the Summer months and sold on commodity markets. To compete on consumer markets requires fairly even production throughout the year — a programme which farmers are unwilling to undertake unless compensated by very high Winter prices. In other words, we have a relative advantage over most of our European competitors in the production of commodity products like butter and carcase beef but are at a relative disadvantage in the production of fresh value added products for all year round consumption.

## Overcoming the Natural Constraints

There is little that can be done about the small home market. But small as it is, it seems logical that we should try and remain competitive on it for commodities which grow well in Ireland. What has happened in the vegetable market in particular is saddening. We should have been able to compete with a large range of vegetables against all outsiders but we let the market slip and now we are trying to get it back. Perhaps we can learn a lesson from our experience. Foreign exporters to Ireland have shown us how to present and market produce. It is now up to Irish growers' and producers' organisations to do likewise.

Our peripheral location is also a fact of life. But the high transport costs resulting are magnified by the steep charges necessary because of very high petrol and oil prices, high vehicle costs and very large insurance charges. The government is looking at the effects of these charges on the tourist industry. It should also consider their effect on industry in general and see if some reduction in taxation on transport can be afforded.

Efforts should also be made to reduce our high shipping costs. Germany and the Netherlands cam import cereals and other raw materials very cheaply in bulk tankers through the deep sea ports of Hamburg and Rotterdam and through these ports also obtain cereal substitutes like manioc from Thailand at very low prices. The time has now come when Ireland must seriously consider using a deep sea port for the same purpose. In 1986 some 1.5 million tonnes of animal feed were imported and if we add to this, wheat and other cereals for human consumption, total imports of animal and human foods were in the region of 2 million tonnes. There is thus ample tonnage for the use of large cargo vessels which would make it possible to substitute manioc for some of the more expensive feeds.

The obvious site for an Irish deep sea port is Shannon estuary through which we are already importing large quantities of bauxite and coal. Substantial deep water port space is already available at Moneypoint power station, which space is not being utilised to anything like its full capacity with coal imports. Arrangements should therefore be made with the ESB to have docking space made available for grain and other large cargo ships at this port. It might be necessary to set up a semi-State port company to handle such arrangements but this should not present serious obstacles.

Modern technology can help to overcome climatic effects to some extent. Specialised machinery. enables farmers to sow and harvest crops in a very short space of time and thus make maximum use of any fine weather available. New varieties of grain enable early harvesting in July and August when the chances of getting fine weather are good. Modern silage production techniques make grass available the whole year round and help to reduce considerably the cost of Winter feeding. It is becoming possible, therefore, to even out the seasonality pattern for both beef and milk but there are still fairly substantial price incentives needed to bring forth the necessary Winter supplies.

The government, through the reorganised AFT and ACOT, must continue to press ahead with research and advice for farmers so that they can eventually overcome to a great extent the unfavourable climatic features. The training scheme for young farmers, currently under threat, must also be continued. There is little point in doing research unless those for whom it is done can avail of it.

## Artificial Constraints

Prior to our joining the EEC we were completely dependent on the low-priced British market which had quota restrictions on most products. As a result, the Irish food processing industry could not develop. On joining the Common Market in 1973 it was expected that these restrictions would all be removed and that the food industry would prosper. This has not happened.

The Common Agricultural Policy was designed to support farm prices (and incomes) but in many ways it has been antipathetic towards the food processing industry; high prices for farmers mean expensive raw materials for processors. This would not matter to any great extent if there were common agricultural prices in the EEC. But because different prices are allowed in different states, with inadequate border tax protection (MCAs) on many processed products, exporting countries like Ireland are often at a competitive disadvantage for many processed foods compared with importing countries like the UK whose objective is to keep market prices as low as possible, e.g., through the variable premium and through arrangements for the import of cheap meat from third countries for direct consumption and for processing. There have been short periods when the MCA system worked to Ireland's advantage, but these have been exceptional. In face of these disadvantages, it has been almost impossible for Ireland to develop a vigorous food processing industry. It has taken years to sort out some of the more blatant MCA anomalies. And it looks as if it will take many more years to wipe out the remaining impediments, including the UK variable premium scheme.

If and when the various anomalies are sorted out, Irish food processors will have a chance of expanding. As matters stand, many have no such chance. They can become uncompetitive overnight as a result of green pound decisions at home and abroad over which they have no control. To protect themselves, some meat processors have plants both at home and in the UK where slaughtering is carried on to best avail of the currency exchange situation. These firms are indifferent to the agri-monetary situation but because much of their business is done abroad, their benefit to the nation is reduced. Firms which cannot afford such flexibility are stuck with the existing situation and must be protected by every means at the disposal of the government.

Removal of agri-monetary and other such barriers, however, does not mean automatic success for all industries. Value added activities will only be located here if they can prove their viability on the international market. Apart from raw material prices, the other cost environment is very hostile. Transport costs have

already been mentioned but firms also suffer disadvantages due to higher energy, communication and payroll costs than their competitors. Thus, while it is necessary to tackle the specific barriers to expansion identified above, the stabilisation and increase of food industry employment will also require a concerted effort to tackle those wider industrial policy-type questions.

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## Appendix

*Green Exchange Rates (Agricultural Conversion Rates)*

Under the CAP, prices for agricultural products are fixed in ECUs. These prices are converted into national currencies using what are called green exchange rates. These rates may or may not differ from the central exchange rate which is fixed by the EEC and around which the market rate can vary within a narrow range.

In Ireland at the present time (October 1987), five green exchange rates are in operation, vix.:—

| | | |
|---|---|---|
| For Beef | 1 ECU | = IR£0.844177 |
| For Milk | 1 ECU | = IR£0.832119 |
| For Cereals & Sugar | 1 ECU | = IR£0.831375 |
| For Pigmeat | 1 ECU | = IR£0.829579 |
| For Sheep | 1 ECU | = IR£0.817756 |

For other agricultural products the central exchange rate of 0.768411 applies.

*MCAs — Monetary Compensatory Amounts*

These are border taxes introduced for the purpose of equalising agricultural prices within the EEC for products having green rates which differ from central rates. Two kinds of MCAs are in operation, negative and positive.

*Negative MCAs*

*If a country devalues its currency, and does not devalue the green rates for some products by the same amount, prices for the commodities in question will be lower than they would be if their green rates had been fully devalued. To prevent exporters from this country selling into intervention in other states, or exercising unfair competition on other markets, border taxes are introduced, the rates of which are roughly equivalent to*

*the monetary gaps, i.e., the percentage difference between central and green rates for the different commodities. These taxes* — in this case called negative MCAs — are paid on exports of the relevant products to all other countries, both inside and outside the EEC. A similar rate of *subsidy* is paid on imports of these commodities into the country in question.

## Positive MCAs

If a country revalues its currency, and does not revalue the green rates for some products by the same amount, prices for the commodities in question will be higher than they would be if their green rates were fully revalued. To prevent other countries with lower prices from availing of this market or selling into intervention in this country, MCA *taxes* are charged on all imports of the products concerned. Similarly, MCA subsidies are received on all exports of these products from this country. These taxes and subsidies are known as positive MCAs.

## Irish and UK MCAs

Irish MCAs at the present time (October 1987) are:—

| Beef | — | – 2.0 per cent |
| Milk | — | – 3.5 per cent |
| Cereals, sugar | — | – 3.6 per cent |
| Pigmeat | — | – 2.8 per cent |
| Poultry and eggs | — | zero |

The MCA payments are calculated by applying these percentages to the intervention price or to some fraction of the intervention price or to some fraction of a notional intervention price in the case of commodities for which there is no intervention price e.g., pigs, cheese, etc. IN the case of poultry and eggs, MCAs, when they apply, are related to the intervention prices

of the estimated amounts of cereals used in their production (the cereal feed ration system).

UK MCAs at the present time are:—

| Sugar and cereals | — | – 17.8 per cent |
| Milk products | — | – 16.1 per cent |
| Poultry and eggs | — | – 14.3 per cent |
| Pigmeat | — | – 15.1 per cent |
| Beef | — | – 8.7 per cent |

An Irish exporter of beef to the UK would receive the difference between the UK and Irish MCA as a subsidy, i.e., – 8.7 – (–2.0) = – 6.7%. On pigmeat exports the subsidy would be – 15.1 – (–2.8) = – 12.3%, while on milk products the subsidy would be – 16.1 – (–3.5) = – 12.6%. Similarly for the other products listed.

## Export Refunds

These are payments by the EEC on exports of certain agricutlural products to countries outside the Community. In theory the magnitude of the refund for a particular commodity is the difference between the EEC intervention price or some notional intervention price and the world price. In practice the refunds are based on political or GATT considerations and they vary from country to country. The refunds are reveiwed every month by commodity committees and changed if deemed necessary. An exporter of a particular commodity to a particular country will know the magnitude (in ECUs) of the refund he will receive at time of signing the contract and the refund will relate to that date and not to date of delivery. Refunds are paid to the exporter in his national currency and are converted from ECUs at the Green rates applying to the commodity concerned. Negative MCAs where they apply are deducted from the export refunds and Positive MCAs are added.

Irish products which are eligible for export refunds are:—

Beef, pigmeat, poultry and eggs, milk products, fruit and vegetables, cereals, sugar and certain processed products containing these basic commodities.

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