
The Nature and Functioning of Labour Markets

**A Survey of International and Irish
Literature and a Statement of Research Priorities for Ireland**

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 - (ii) the attainment of the highest sustainable rate of economic growth.
 - (iii) the fair and equitable distribution of the income and wealth of the nation,
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 - (v) the balanced development of all regions in the country, and
 - (vi) the social implications of economic growth, including the need to protect the environment.
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 - Five persons nominated by the Confederation of Irish Industry and the Irish Employers' Confederation,
 - Five persons nominated by the Irish Congress of Trade Unions,
 - Five other persons appointed by the Government, including two from the National Youth Council of Ireland,
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6. The numbers, remuneration and conditions of service of staff are subject to the approval of the Taoiseach.
7. The Council shall regulate its own procedure.

THE NATURE AND FUNCTIONING OF LABOUR MARKETS:*

A Survey of International and Irish Literature and a Statement of Research Priorities for Ireland.

by

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*Comments on earlier drafts by Gerry Danaher, a subcommittee of the NESC chaired by Mr. G. Tierney, and Brendan Walsh led to substantial improvements. The usual disclaimer applies.

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PREFACE

Introduction

The Council published a report in 1985 entitled *Manpower Policy in Ireland*. The overall objective of that report was to undertake a fundamental review of manpower policy, the concept of which had remained relatively unchanged for two decades. Among the recommendations made by the Council in that report were the following:

- (i) to bring labour market considerations to bear on the assessment of general economic and social policies;
- (ii) to strengthen the Department of Labour;
- (iii) priorities in resource allocation to be determined by the needs of target groups rather than by the sources of funding.

In the report it was argued that there was need to broaden the concept of a manpower policy and to think instead in terms of an overall policy for the labour market. This view was formed against the following background:

- (i) the lack of progress in integrating general economic and social policy with manpower policy;
- (ii) the absence of any overall perspective on the labour market;
- (iii) the continuing high level of unemployment.

The broad components of a proposed labour market policy were also set out in that report. However, any attempt to be more specific than itemising the broad components of a labour market policy was hampered by an absence of knowledge about the nature and functioning of the Irish labour market. While it was possible at that stage to enumerate some of the major deficiencies it was thought desirable to approach the identification of gaps in our knowledge more formally and to attempt a ranking of priorities for filling these gaps. To this end, Professor Geary of Maynooth was commissioned to undertake a review of the literature and a discussion of research priorities with the following terms of reference:

- (i) to set out a conceptual framework for the study of the Irish labour market;
- (ii) to undertake a review of the Irish literature on labour market analysis;
- (iii) to undertake a selective survey of the international literature on labour market analysis together with an assessment of the main policy concerns on the international front;
- (iv) to identify the gaps in our knowledge of the functioning of the Irish labour market and to set priorities for filling these knowledge gaps.

Features of the Review

Professor Geary begins his review of the literature by setting out a conceptual framework within which to review the literature and more generally to guide out thinking into the nature and functioning of labour markets. This framework leads to a focus on:

- (i) the decisions of employers about the demand for labour;
- (ii) the decisions of individuals about the supply of labour; and
- (iii) the interactions of these decisions and the levels of employment, earnings etc. to which they give rise.

The Council agrees with the consultant that such a framework is a vital underpinning to understanding the observed values of labour market variables. This is shown to very good effect by a number of examples chosen by the consultant to demonstrate the erroneous conclusions that can be reached in the absence of a well formulated framework.

The first feature of the review which merits mention is that despite some good individual pieces of research, work on the Irish labour market in some important areas is underdeveloped. This is the case particularly in regard to labour supply. Despite some very significant changes in labour supply in Ireland there is no Irish counterpart to international research into this topic.

One has however, to tailor expectations to what has been achieved by the significant volume of international research into labour supply. A recent survey of research on the labour supply of men concluded that there is a great deal that we do not know and that is waiting to be discovered, with a similar survey on the labour supply of women concluding that recent work has increased the variance of the estimates of the responsiveness of female labour supply to wages.

A second area where Irish research has not kept pace with international developments is in the area of unemployment. A particularly interesting feature of the results of some of the international research in this area is the conclusion that changes in labour supply have not been a source of the increases in unemployment experienced across OECD countries. As the consultant points out the lack of a clear connection between unemployment and labour supply growth has important policy implications. It raises questions about the effects of higher female participation on unemployment and also about the effects of emigration, work sharing and early retirement, all of which have their effects through the labour supply channel. It is also interesting to note in the context of labour supply that Ireland's labour force growth has not been exceptional by international standards. While it has been well above the growth rate for Europe as a whole it was below that of the Netherlands, Norway, US and Canada.

As well as reviewing the labour market literature from demand and supply perspective and also from the perspective of their interaction, the consultant also reviewed some recent developments in the policy area, particularly that area of policy characterised as "labour market flexibility". He firstly describes

what is meant by labour market flexibility and emphasises that flexibility has a number of dimensions and that economies can display different kinds of flexibility. Therefore, to simply describe one economy as having more flexible labour markets than another is inappropriate. An interesting conclusion on one aspect of aggregate flexibility, viz. the system of wage bargaining, is that labour market flexibility is distinct from the concept of decentralised wage bargaining. He also draws attention to the conclusion that there is little quantitative evidence on the importance of employment protection laws as causes of unemployment.

While this brief overview of some of the main features of the consultant's review yields very interesting conclusions on the international front, a significant amount of work is required before we approach a stage in Ireland where we can discriminate between many of the competing hypotheses put forward regarding the functioning of the Irish labour market.

The Research Agenda

The Council views research into the labour market as a logical follow-on to much of its recent work on the Irish economy. In Strategy for Development the Council recommended a macro-economic strategy designed to address the twin problems of continuing high levels of unemployment and imbalance in the public finances. However, a correct macro-economic strategy in isolation is unlikely to bring unemployment near to acceptable levels. The Council has also devoted significant resources to an evaluation of Ireland's industrial policy. This policy also has as its ultimate objective the creation of employment and consequential reduction of unemployment. Work in the labour market area thus follows on naturally from the Council's previous work and complements the macro-economic policies and industrial policies already articulated by the Council.

Since the Department of Labour has primary responsibility for offering advice on labour market issues the Council has decided to enter into a co-operative arrangement with the Department in commissioning and funding the research which it is proposed to undertake. Rather than just undertaking one project on the labour market, the Council and the Department have decided to undertake four projects in all. The reason for this is because the gaps in our knowledge of the functioning of the Irish labour market are quite wide-ranging and, more importantly, many of them are interrelated, a number of issues need to be addressed in order to get a comprehensive picture. The second reason is that in order to provide some coherence to the Workprogramme a number of projects focussed around a central theme is essential.

The first of these projects which it is proposed to undertake is on unemployment. Much work has been done internationally in attempting to explain the growth in unemployment and a variety of models has been proposed. As indicated earlier Irish research has not kept pace with international developments. The objective of the study will therefore to draw on this international work to ascertain whether the Irish experience is similar to other countries. The study will attempt to discriminate between a number of postulated variables as to their effect on unemployment, for example, demand factors, wage pressure, employers' labour

taxes, replacement ratios, changes in the structure of labour demand, employment legislation etc. It will also examine whether the importance of these factors has varied across various sub-periods.

The second project will deal with the issue of female participation in the labour force. In his review of the literature, Professor Geary highlighted one of the most striking developments in the evolution of the Irish labour force in the 1970s, namely, the change in the labour force participation of married women. Measured as a percentage of the married female population aged 15 years and over, it doubled between 1971 and 1979, from 7.5 to 15.2% and by 1986 had increased to 21%. Despite this increase it remains low by international standards, at less than two thirds of the rate in EEC.

There has also been a long term decline internationally in weekly hours worked by women. In the case of the UK, for example, the percentage of employed women working full time (defined as more than 30 hours per week) has hardly changed since 1950. All the growth has therefore been in part-time work. This raises interesting questions for Ireland regarding the conjunction of the rapid growth in married female participation and the apparently low and little changing levels of part-time employment as a proportion of total employment.

The study will also address the issue of whether Ireland is likely to emulate other countries in regard to the growth in participation. To answer this it will be necessary to assess the influences on participation, and then ascertain what future direction these influences are likely to take. If participation continues to grow it will have fundamental implications for the types of employment relationships in the economy. These in turn could have implications for the existence/evolution of a marginal segment of the labour force and all the attendant policy issues in the area of social security etc. It will be important to distinguish between independent and policy influences.

The consultant also draws attention in his survey to the differential labour supply responses of men and women and the consequential implications for incentives in the labour market. This raises a whole host of issues regarding the system of taxation of single/married people and for tax reform more generally. These issues will also be addressed in the study.

Also coming under the general heading of labour supply is the issue of migration. Ireland has experienced both periods of immigration and emigration. Most of the research which has been carried out in Ireland deals with the causes of migration. It is therefore proposed that the study to be undertaken will deal primarily with the consequences of migration, from both economic and sociological perspectives. The links between migration and macro-economic performance will be explored as will the implication of alternative migration outcomes for policies and public expenditure in relation to health, education and welfare. The study will also try to identify groups for whom emigration entails high risks and formulate policies to aid them and will also design specific labour market policies in the event of continuing emigration.

The final area in which it is intended to undertake research is in the area of

employment. As the consultant indicates in his review, employment has been studied at the aggregate level in Ireland. However, disaggregated time series data are available but have not been subjected to detailed analysis. Inter-industry responses are particularly important in the context of the flexibility discussion contained in the consultant's report. The Council and the Department of Labour are currently assessing the precise nature of the project which could be carried out under this heading.

The Council is of the view that the issues raised by the consultant are important policy issues. It is also of the view that the Council is the appropriate organisation to initiate this kind of research. The kind of hypotheses which the proposed research is designed to test and the kind of questions it is designed to answer are very much of the type which an organisation charged with the provision of economic and social advice ought to be giving to Government. Some of these issues are also those on which different groups within Council might hold different views — research is the main way of discriminating between those views. As can be seen from the consultant's review, many of these issues are coming to the fore abroad and are likely to do so here if present levels of unemployment are not reduced significantly e.g. early retirement, working time reorganisation etc.

A number of concerns arise about NESC undertaking this research. *Firstly*, parts of it are likely to be more technical than the type of research in which NESC has traditionally become involved. However, this appears to be the only way to proceed. *Secondly*, some of the research in this area as described by the consultant is pretty inconclusive. This is a danger but Governments have to take policy decisions and advisory bodies have to advise. It may therefore be necessary in some cases for advice to reflect the combined judgement of the interests on the Council where technical research has failed to deliver a firm conclusion.

Chapter 1

A Conceptual Framework for the Study of the Irish Labour Market.

1. THE BACKGROUND: LABOUR FORCE, EMPLOYMENT AND UNEMPLOYMENT 1979-1986¹

In April, 1986, the number of people in the labour force in Ireland was estimated to be 1.302 million. This represents an increase of 67,000 since 1979 but a decline of 5,000 since 1983. About 31 per cent of the labour force were women, compared to 29.4 per cent in 1979. The number of people at work was 1.075 million, which is 82.6 per cent of the labour force. Thus 17.4 per cent were unemployed; the figure in 1979 was 6.9 per cent. Most of the dramatic rise in unemployment had taken place by 1983, when the rate was 14%. Since then it has increased slowly and was little changed in 1986 relative to 1985. These data are summarised in Table 1.

The Irish labour force grew at an average annual rate of about 1.25 per cent from 1971 to 1983, due to a combination of natural increase and immigration. The rate was at its highest between 1975 and 1979, when it was 1.6 per cent per annum. This is well above the growth rate for Europe as a whole, but over the period 1971-1983 the Irish rate was below that of the Netherlands and Norway, as well as the U.S. and Canada (Table 2).

TABLE 1

	1971			1986		
	Male	Female	Total	Male	Female	Total
	,000s					
Population aged 15+	1166	1172	2238	1244	1272	2516
Labour Force	892	344	1235	911	391	1302
Employed	828	323	1150	737	338	1075
Unemployed	64	21	85	174	54	227
	PERCENTAGE					
Participation Rate	76.5	29.4	55.2	73.2	30.7	51.7
Unemployment Rate	7.2	6.1	6.9	19.1	13.8	17.4

Note: The total labour force, employed and unemployed are modified estimates which appear in the 1986 Labour Force Survey. The male-female breakdown is based on the *unmodified* survey estimates.

TABLE 2

Labour Force Growth (percentage average annual rates)

	1973-75	1975-79	1980-83	1984-86
Ireland	1.1	1.6	1.4	0.0
USA	2.3	2.8	1.8	2.0
Canada	3.7	3.0	2.0	1.8
France	-0.6	0.0	0.1	0.6
Netherlands	1.2	1.0	2.9	0.3
Norway	2.0	2.2	1.5	3.0
Sweden	1.9	0.8	0.4	-0.9
UK	0.5	0.7	1.9	0.7
OECD EUROPE	0.7	0.7	0.8	0.8

Source: OECD Employment Outlook 1987, Table F

The rate of labour force growth in Ireland, therefore, has hardly been exceptional by international standards. Since 1983, the labour force has shown a slight decline, as emigration has resumed at a significant level: net emigration from 1983 to 1986 is estimated to be 60,000, which contrasts to the net immigration of 104,000 between 1971 and 1981.

Some important developments in the labour force took place in the 1970s. The most striking was the change in the labour force participation of married women. Measured as a percentage of the married female population aged 15 years and over, it doubled between 1971 and 1979, from 7.5 to 15.2 per cent; by 1986 it had increased to 21 per cent. Despite this increase it remains low by international standards; in fact it is less than two-thirds of the rate in the E.E.C. Over the same period, the participation rate of single women declined from 60.2 per cent in 1971 to 54.1 per cent in 1986 and of all men from 82 per cent in 1971 to 73.2 per cent in 1986. Both of these declines are influenced by increased years of full time education and earlier retirement.

The number at work in 1986 was 75,000 lower than in 1979, which represents an average annual decline of nearly one per cent. However, it has been accompanied by a continuation of sectoral changes, some of which have been in progress for a long time. Employment in agriculture, forestry and fishing fell by 54,000 which implies an average annual decline of 4.0 per cent. Its share of total employment fell from 19.3 per cent to 15.6 per cent. The numbers employed in industry were 68,000 lower in 1986 than in 1979, implying an average annual decline of 2.9 per cent. Industry's share of total employment fell from 32.1 per cent to 28 per cent. The only sector in which employment increased was the services sector of the economy. Services sector employment increased by 47,000, an average annual growth rate of 1.2 per cent. Within the services sector, all of the main sub-sectors showed increases in employment; the fastest growth was in insurance, finance and business services, professional services and public administration and defense. The share of the services sector in total employment increased from 48.6 per cent in 1979 to 56.4 per cent in 1986.

TABLE 3

Employment (000)

	1979			1986		
	Male	Female	Total	Male	Female	Total
Agriculture, Forestry and Fishing	202	20	222	153	15	168
Industry	298	72	369	236	65	301
Services	329	230	559	347	259	606
	& Share of Total Employment			% Share of Female Employment		
	1979		1986	1979		1986
Agriculture, Forestry and Fishing	19.3		15.6	6.2		3.8
Industry	32.1		28.0	22.4		19.2
Services	48.6		56.4	71.4		76.4

An important characteristic of employment in the services sector is the high proportion that is female. In services as a whole, females accounted for 41.1 per cent of employment in 1979 and 42.7 per cent in 1986; in 1986, 76.4 per cent of women at work were employed in services. Given these facts it should not be surprising to find that in the economy as a whole there were fewer men at work in 1986 than in 1979 (91,000 fewer) but more women (15,000 more). The increase in female employment was more than accounted for by the increase in the number of employed, married women, with declines in the number of single and widowed women in employment.

Recorded levels of part-time employment as a proportion of total have changed little in Ireland between 1979 and 1985. Part-time employment accounted for 6.7 per cent of the the total employment in 1979 and 6.5 per cent in 1985. This is very low by the standards of some European countries. For example, the corresponding proportions in U.K., Sweden and the Netherlands exceed 20 per cent. It raises the question as to whether part-time employment is being accurately measured. In Ireland, more than two-thirds of those recorded in part-time employment are women.

As already noted, the unemployment rate in 1986 was two and a half times the rate in 1979. At 17.4 per cent of the labour force it is high by European standards but it must also be noted that unemployment rates in Europe, too, are high by historical standards. Thus the high level of unemployment in Ireland is an acute case of a problem shared with many European economies.

An important feature of Irish unemployment in the recent past has been the increase in its duration. The severity of the unemployment problem is greatly affected by the length of time people who lose, or cannot obtain, jobs remain unemployed. The percentage of males who were unemployed for a year or more rose from 39 per cent in 1980 to 50 per cent late in 1987 and for females the

percentage rose from 22 to 33 per cent. The most significant increases in the percentage occurred among younger workers. However, while the youth dimension of the Irish unemployment problem is important, the rate of unemployment among those aged 15 to 24 is still only slightly above the overall rate. This is in contrast to the experience of many European countries, where the youth unemployment rate has been much higher than the overall rate.

This concludes the review of some of the main developments over the period 1979 to 1986. It is intended to be illustrative, not comprehensive. There are many important issues which could only adequately be presented at considerable length and, it must be said, after some research. These will be referred to later. The general picture that emerges is one of labour force expansion largely completed by 1983, falling employment and rising unemployment. But within that general picture, significant changes took place. Prominent among them were the increase in labour force participation of married women, the change in migration flows and the change in the sectoral distribution of employment. The fact that unemployment has been so high in the 1980's raises many difficult questions, both of a macroeconomic and a microeconomic nature. These questions are being addressed in many countries because they are experiencing the same phenomenon in varying degrees of severity.

2. THE GENERAL PERSPECTIVE

The level of employment and unemployment in an economy is obviously influenced by the general level of demand for goods and services i.e. by macroeconomic conditions. Macroeconomic conditions are influenced by the policy stance of the domestic government and, of particular importance to a country like Ireland, by the policies of foreign governments. The issue of the long run effectiveness of domestic macroeconomic policies is a live one in Ireland, given the consequences of the policies of Irish governments in the past decade.² However, a more microeconomic perspective informs this study; employment and unemployment are examined as the outcomes of the functioning of labour markets.

The term "labour market" is often resisted. A recent American text³ quoted a rumour that a Secretary of Labour attempted to abolish the term from departmental publications because he believed that it demeaned people to think of labour as being bought and sold like any commodity. As the authors note, labour has unique characteristics. The obvious one, of course, is that workers are not bought and sold; employers *rent* the services of employees. Further, to quote them, "because labour services cannot be separated from workers, the conditions under which such services are rented are often as important as the price. Put differently, *non-pecuniary factors* — such as work environment, risk of injury, personalities of managers and flexibility of work hours — loom larger in employment transactions than they do in markets for commodities". Another important difference lies in the legislation and institutions, such as trade unions, which affect the relationship between employer and worker.

However, employer-employee relationships can reasonably be viewed as existing within a market context. Institutions exist to facilitate contact between demanders and suppliers of the services of labour. Advertisements, employment

agencies and labour exchanges are obvious examples. When contact is established information about wages and conditions is exchanged. Finally if agreement is reached, some kind of contract comes into force, whether formal or informal, covering wages, conditions, security and so on. It is argued below that not only is this a plausible way of looking at employer-employee transactions but that it provides a vital conceptual framework for analysing them.

It will be clear from later sections of this chapter that the labour market perspective opens up many important policy questions. To anticipate, one is the effect of taxation policy on employment. This immediately indicates that the macroeconomic and microeconomic perspectives cannot be easily separated; taxation policy obviously has macroeconomic implications. But it has been true of much of the work on the Irish economy that it has taken place largely, if not entirely within a macroeconomic framework⁴ so that a large set of issues has received relatively little attention. It is argued that, a more detailed examination of the decisions of employers, employees and their interaction is necessary if policies to affect employment and unemployment levels are to be fruitful.

3. THE CONCEPTUAL FRAMEWORK

The adoption of a market framework leads to a focus on

- (1) the decisions of employers about how many people to hire, what type of people to hire and how many hours should be worked i.e. on the determinants of the demand for labour;
- (2) the decisions of individuals about whether or not to participate in the labour force and, if in employment, about how many hours to work should a choice be offered i.e. on the determinants of the supply of labour;
- (3) the interactions of the decisions of the demanders and suppliers of labour, which determine the actual levels of employment, earnings, fringe benefits and other conditions observed in the economy.

These topics are considered in more detail in later sections. At this point it should be emphasised that working within this framework does not prejudge the nature of the outcomes. It is as consistent with negotiated contracts which give rise to small wage variation and employment stability within firms as with outcomes in which both employment and wages fluctuate substantially in response to changes in economic conditions. Neither does it prejudge such questions as whether it is useful to think in terms of a single labour market or many labour markets and, if the latter, the degree to which these markets are segmented. Further, the concept of a labour market can be applied to the public sector as well as the private sector.

The value of establishing such a framework can be illustrated by a few examples. First, consider the often used concept of the "real wage"; exactly what is meant by it? The answer is that it means different things to different people. To an employee it means the real purchasing power of the wage. Thus it is the wage relative to the prices of goods and services which the employee wishes to buy. represented on average by the Consumer Price Index. This is the meaning

which is most often encountered. To an employer, however, it is not the Consumer Price Index which matters but the prices at which the firm's outputs can be sold. These prices can change at markedly different rates from the C.P.I.; if the latter increases more rapidly than the former a wage bargain which contains full cost-of-living adjustment clauses will imply difficulties for the employer. Precisely such problems arose in the National Wage Agreement of 1975, which effectively involved full indexation of wage rates to the C.P.I. As will be recalled, the government of the day found it necessary to introduce a mini-budget which lowered indirect taxes in order to mitigate the consequences of indexation (for government and other employers). Viewed from the employer (or demand) side and the employee (or supply) side, the real wage has different meanings.

When the operation of the tax and social welfare codes are taken into account, the difference grows. Employers' PRSI is an employment tax. The gross wage paid by the employer is thus greater than the wage received by the employee even if the latter paid no taxes. Given both employee's PRSI and income tax the difference between the gross wage paid by the employer and the take-home pay of the employee widens substantially. When the indirect tax content (VAT, excise-tax, etc) of the C.P.I. is added, the gap is even wider. The sum of all these taxes, including PRSI, has become known as the "tax wedge"; evidence on its growth in Ireland is documented in *NESC Report 83*. The point to be emphasised is that by having a framework within which to consider a concept like the real wage, it becomes apparent that it is multi-faceted and that some of the facets are the result of government policies and are subject to change through changes in these policies.

A final illustration, not so much of the usefulness of but of the necessity for a conceptual framework of the type outlined, arises from observations about the relationship between employment and real wages. This relationship has been the subject of much discussion. To obtain a perspective on it, suppose wage rates are observed to increase; in addition, with no changes in the tax and social welfare codes, suppose *real* wages to both employers and employees rise. The following question is then asked: what is then implied about the level of employment?

The framework provides the answer. Employment may increase, decrease or remain unchanged: the question is not well-posed. This may be seen by considering some examples. In the simple case of a competitive labour market, an increase in the demand for labour would lead to higher real wages and higher employment. Thus, if the source of the observed real wage increases were stronger demand, higher real wages would be accompanied by *higher* employment. In a unionised labour market, the same outcome could obviously occur; favourable demand conditions could be reflected in increasing real wages and employment. However, the real wage increase could have had a different source. If, say, large scale emigration led to a significant reduction in the supply of some types of labour, the expectation would be that higher real wages would accompany *lower* employment. Similarly, if unions succeeded in negotiating higher wage rates when labour demand conditions remained unchanged or unfavourable, the same outcome could occur.

The more discretion firms have in setting the price of output — the more "market power" they possess — the more the real wage to firms is determined

in product markets as well as the labour market. If firms change the prices of their output, they are changing the real wage, so that the real wage is to that extent under their control. In such situations the observed relationship between employment and real wages again depends on the type of changes taking place in output and labour markets and also on the structure of firms' costs. To summarise, the conceptual framework makes it clear that higher wages can be accompanied by higher or lower employment but it also helps to determine the circumstances under which each outcome is likely. It thus enables pointless questions to be avoided and directs attention to the issues which matter.

4. DEMAND AND SUPPLY IN THE LABOUR MARKET

The determinants of the demand for labour may be summarised as follows. Firstly, there are the markets for output, which depend on domestic and world economic conditions as well as on the characteristics of the goods and services provided. Secondly, there is the cost of labour. This includes wages, employment taxes and other non-wage costs. It also includes costs associated with changing employment, such as hiring costs and costs of training new employees, and firing costs, such as severance and redundancy payments. The nature of some of these costs emphasises the extent to which hiring decisions are investments decisions. They also influence the decision whether to change the numbers of employees or to change hours worked by existing employees. Thirdly, there are the costs of other productive inputs. These include costs of energy and materials and, of particular relevance in the Irish context, the cost of capital, which has been strongly influenced by government taxation policies and by IDA and other incentive schemes. Fourthly, the financial position of the firm affects its vulnerability to shocks and thus may influence labour demand. Finally, there is technology, the state of knowledge about production methods.

Listing the determinants of employment demand in this way should not conceal the underlying complexities of the hiring or firing decision. The fact that increasing the number of employees involves recruitment and training costs, reducing the number of employees involves severance and redundancy payments and either could involve internal reorganisation, can result in the response to a change in market conditions being spread over a number of months and even years. This makes detection of the responses almost impossible in the absence of a well specified framework.

Labour supply decisions are of two connected types. The first is whether or not to participate in the labour market. An obvious influence on the number of participants is the size of the population of working age. Government policies on education and retirement affect this group, so that the structures of education grants and pension schemes, for example, are determinants of labour supply. In general, the participation decision depends on the returns to participation, monetary and non-monetary. The monetary returns from employment are strongly influenced by income taxes, indirect taxes and employee's PRSI. What is relevant for participation is how the returns compare to those from non-participation — the income provided by the social welfare system — or through participation of a different nature, such as in the "black economy" or in a foreign labour market. The latter is of obvious relevance to Ireland. The decision to migrate is influenced by many factors. The monetary determinants include

the incomes to be obtained from employment at home and abroad, the probabilities of finding employment at home and abroad and the incomes to be received if unemployment results. Thus the tax and social welfare systems of Ireland and the destination countries have a bearing on this decision.

Apart from the effects of the increase in the number of years spent in full time education and earlier retirement, the participation rates of men have not changed much in the post war period. However, the participation rate of women increased, entirely due to the entry of married women to the labour force, as noted above. The nature of this change in labour supply raises interesting issues, not only in the extent to which it has occurred and in the industries in which it has occurred, but also in terms of the potential for further increases in labour supply in Ireland.

Full-time jobs may involve a restriction on the choice of hours of work, the second type of labour supply decision. When such a decision is operative, as it obviously can be for those in part-time employment, too, the monetary determinants of the outcome include the *structure* of the wage system (whether the basic rate-overtime rate distinction is used or whether alternative incentives are offered), as well as the wage level and the tax system. Attitudes to longer working hours and "leisure" are also relevant.

The outcomes of the interaction of demand and supply decisions can be described under three headings. The first is the level and structure of employment, in terms of both numbers employed and number of hours worked per employee. The second is the level and structure of wage rates and other forms of remuneration such as fringe benefits. As already noted, *real* wages are also influenced by conditions in the markets for output. The third is the level of unemployment, which is the difference between the numbers in the labour force and the numbers in employment. These outcomes define the performance of labour markets.

Performance is determined not only by the type of demand and supply side influences described above, but also by the institutional structures of the labour market. These include the nature of both employer and employee organisations, the institutions governing the bargaining process, the role of government and employment and wage legislation. Irish institutions and legislation have points of similarity with those of other countries but they are distinct in some respects. While the influences of, for example, education, training and skills on wage determination have long been the subject of intensive study, the importance of institutional structures has recently become the focus of attention. Often this has been under the general heading of "labour market flexibility".

The concept of labour market flexibility relates to the responsiveness of wages, employment and working practices to changes in market conditions. As such it operates at different levels: within firms, within industries and in the economy as whole; it embraces institutional and other factors. An extremely broad array of issues is raised by the concept, ranging from the issue of how wage and employment outcomes are affected by whether negotiations take place at national or local level, to job security provisions, demarcation rules and work-sharing schemes within firms.

It is clear that the actual employment patterns and arrangements observed in an economy are the outcome of a complex interaction between the interests of

employers (demanders of labour) and employees (suppliers of labour); the same is true of the observed remuneration schemes. The objective of labour market policy is to improve the performance of labour markets. From the policy viewpoint, the *quantitative* importance of the relationships discussed here is crucial.

5. CONCLUSION

This chapter has described some of the important developments in the Irish labour market in the period 1979 to 1986. They are the large rise in unemployment, labour force growth and declining employment. The changes in participation rates, in migration and in the sectoral distribution of employment have also been described.

The discussion has referred to the issue of the influence of macroeconomic conditions on employment and remuneration levels in the economy, but the focus has intentionally been directed more on the microeconomic questions that arise in analysing the functioning of the labour market. These questions have been the subject of less investigation in Ireland than they warrant. Employment, unemployment and wages are affected by the detailed provisions of government policy with regard to taxation in all its forms, the education and social welfare systems, employment and wage legislation and all labour market institutions. Furthermore, the economy's long-run performance will be affected by the functioning of its labour markets.

It has been emphasised that a coherent conceptual framework is necessary if the workings of labour markets are to be understood. The framework outlined here has a simple structure. It involves analysis of decisions from the viewpoint of employers, who are the demanders of labour, and from the viewpoint of the individuals who are the actual or potential suppliers of labour. The observed employment levels, work arrangements and remuneration schemes are interpreted as the outcome of the interaction of these decisions. It is argued that this is the most fruitful way to study labour markets. Without the perspectives provided by this framework it is impossible adequately to appraise the quality of labour market performance and the effects of government policies.

Chapter 2

A Selective Survey of the International Literature on Labour Market Research.

1. INTRODUCTION

The study of labour markets has been pursued intensively in the past two decades. The object of this chapter is to present a concise account of the type of work which has been, and is being done. The main areas of research have been labour supply, employment and unemployment; other well-researched areas include the structure of wages and earnings and employment contracts. Recently, emphasis has been placed on the concept of labour market flexibility in discussing the performance of labour markets and policy has often been considered in this context.

The organisation of this chapter is based on the framework described in Chapter 1. The supply side of the labour market is dealt with initially, in terms of the decision whether or not to participate in the labour force and the decision about hours of work. Then research on the employment decisions of firms is considered. This prepares the way for a discussion of research on unemployment. While some policy issues will be raised in the earlier sections, most of the review of the labour market policy literature will be concentrated in the section on labour market flexibility. The final section will review other topics and their implications.

The review of the three main areas of research is organised as follows. Each begins with a sketch of the empirical background. Then the nature of the research is described and a summary of the main findings is presented. A brief appraisal of the present state of knowledge concludes the section. Specific references are used sparingly, being mainly confined to the most recently published studies, because of the availability of major surveys published in the last five years which contain voluminous bibliographies.¹

2. LABOUR SUPPLY²

(i) Background

Most research on labour supply distinguishes between men and women. The following facts will explain why. The labour force participation rate of men has fallen in Europe and North America throughout this century. The decline has been greatest among those aged more than 65 and it is now about a quarter of its 1900 level in North America and less than that in Europe. The participation rate of men aged less than 20 has also declined substantially. Not surprisingly

by far the highest rate has been for men in the 25-44 age group, where throughout the century it has exceeded 90 per cent; in Britain it has not been recorded below 97 per cent. However, even the age-groups with the highest participation rates have shown a slight decline. In both the U.S. and the U.K. weekly hours worked by men since World War II have shown little trend, after declining up to 1939. It has been suggested, though, that the way data on hours worked are collected may understate a decline in average weekly hours because of the method of treating paid sick leave and holiday time. Variation in weekly hours in the past forty years is pro-cyclical i.e. it responds positively to economic conditions.

Female labour force participation has increased steadily in Europe and North America in the last eighty years. Since 1950, the participation rate of women aged 25 to 44 increased from 33 per cent to about 65 per cent in the U.S., from 23 per cent to 65 per cent in Canada, from 36 per cent to 60 per cent in the U.K., and from 40 per cent to 58 per cent in Germany. In Germany, however, total female participation has changed little, due to a sharp decline in the participation rates of the young and elderly. While greatest among women aged 25 to 44, the increase in female participation since 1950 has occurred at all age levels above 20 and under 56, in the U.S., U.K., Germany, France, Sweden, Italy and Australia; in some of these countries it has increased even among those aged 15 to 19 and 56 to 64. The increases in female participation have been due to married women. In the U.S., participation by single women since 1950 has grown only slowly, in Canada it has remained unchanged and in Britain it has fallen. The contrast of the increase in female participation with the decline in male participation is obvious.

There has been a long term decline in weekly hours worked by women. For example, in the U.S. the percentage of employed women working more than 40 hours per week fell from 26.5 per cent in 1950 to 12.8 per cent in 1980; the percentage working less than 35 hours rose from about 21 per cent in 1950 to 31 per cent in 1980. In the U.K. the percentage of employed women working more than 40 hours per week fell from 17 per cent in 1968 to 5 per cent in 1981; the percentage working 35 hours or less rose from 42 per cent to 49.3 per cent. An interesting feature of the U.K. experience has been that the percentage of employed women working full time, defined as more than 30 hours per week, has hardly changed since 1950. All the growth has been in part-time work (Joshi et al (1985)). The decline in hours worked, however, has not been sufficient to offset the effect of the increase in participation rates; female labour supply has increased.

(ii) Models of Labour Supply

Economic research on labour supply is based on the general model of consumer behaviour, in which choices are made about both consumption patterns and the amount of work done, subject to the constraints given by the prices of goods and services, wage rates, non-wage (or "non-labour" or "property") income, and other factors. The origins of this approach can be traced back at least a century, but the past twenty years have witnessed many developments in formulating realistic versions of the constraints and in extending the environment in which choices are made from a static to a dynamic one.

The predictions of these labour supply models are ambiguous. They do not predict, for example, that increases in wages will lead to an increase in hours

worked; they explain why hours worked may increase, decrease or remain unchanged. The ambiguity stems from individuals' attitudes to time spent at "nonmarket activities", a term more descriptive than the often used "leisure". Higher wage rates increase the return to working longer hours, but they also increase the value of the decision maker's time. Depending on how leisure is valued, this "income effect" could lead to a decision to work fewer hours. Because of this possibility, the analysis of labour supply relies heavily on empirical work. Only by proper measurement of responses can their direction and magnitude be gauged. Proper measurement involves data quality, estimation techniques and appropriate model formulation. There is thus a necessary feedback between theory and measurement and this has been a conspicuous feature of modern research in the area. The reformulation of the constraints under which hours of work decisions are made to allow for the peculiarities of the social welfare and tax systems and limitations on the choice of hours exemplifies this.

Knowledge of labour supply responses is important for an extensive range of issues. Killingsworth (1983) makes this point well:

"The analysis of labor supply has an important bearing on a wide variety of issues of economic and social policy. Debates about welfare payments, the Social Security system, and the income tax system inevitably involve questions about work incentives Controversies about unemployment, wage rigidity, and other macroeconomic problems often raise questions about microeconomic choices between labour and leisure; discussion of male-female wage differentials and household behaviour often focuses on male-female differences in labor-leisure choices."

A recent paper by Blundell and Walker (1988) provides an illustration. They are concerned with the incentive effects of the U.K. tax and benefit system and, in particular, with the implications of the reform of the U.K. tax system. This has involved a substantial lowering of the top rates of tax. Evidence on labour supply responses in the U.K., however, suggests that the hours worked by those paying the highest tax rates, most of whom are men, are likely to respond little to tax cuts, which raises questions about the incentive effects. The main point that it made is that the incentive effects of a tax reform will be greater, the more tax changes are directed at those whose labour supply is likely to respond. Knowledge of the size of labour supply responses is thus necessary to an evaluation of the incentive effects of tax reforms.

The range of policy issues for which a knowledge of labour supply responses is clearly important, which helps to account for the amount of research activity. But an additional factor has also played a central role in explaining it. This is the development, mainly in the U.S., but also in the U.K., of large sets of data which use individuals and households as the unit of observation and which are available to researchers. Examples in the United States include the Michigan Panel Study of Income Dynamics, the National Longitudinal Surveys and the results of a series of negative income tax experiments conducted in the 1970's. In the U.K. the Family Expenditure Survey is the primary example.

The existence of these data sources is regarded by Stafford (1986) as a major impetus to the study of labour supply. He charts the extent to which they have

replaced more aggregated time series data as the source of empirical results. The use of micro-level data sets has its own disadvantages, however, and they are described by Stafford. Among them are the extent of measurement error, the difficulty of matching the theoretical concepts of economics with survey questions, problems of unobserved personal characteristics and the difficulty of working outside a partial equilibrium framework. Despite these disadvantages, some of which can be limited by the techniques of analysis, the use of micro-level data sources is steadily increasing because of the advantages of being able to work with data generated at the level of individual decision makers.

(iii) Labour Supply of Men

Most research on the labour supply of men deals with hours worked rather than participation because the participation rates of men in the economically active age groups are so high. When *participation* is studied, the explanatory variables usually include the following:

- (a) years of education;
- (b) marital status;
- (c) nonwage income, which encompasses interest, rental income dividends, pensions, and welfare payments;
- (d) the unemployment rate;
- (e) age.

Noneconomic variables are often added. In the U.S., "ethnicity" is a common example i.e. whether individuals are black, hispanic or white. Education is highly correlated with wages in employment and is positively associated with participation in U.S. data, while nonwage income is negatively associated with it. The participation rates of married men are higher than those of single men, other things equal. The inclusion of the unemployment rate is based on the idea of "the discouraged worker"; i.e. high unemployment may discourage participation because of the low probability of finding work.

In studies of *hours of work* the list of explanatory variables usually includes:

- (a) wages;
- (b) nonwage income, defined as above;
- (c) marital status;
- (d) the number of children;
- (e) age

and noneconomic variables. The measurement of the wage variable and of nonwage income can present difficulties. For example, the appropriate measure of the wage for hours of work decisions is the marginal wage, which should be adjusted by the marginal tax rate. Data on both of these may be hard to obtain.

Most attention had been directed at the responsiveness of hours worked to changes in wages and nonwage income. The level of sophistication of the theoretical and empirical analysis has steadily increased but, unfortunately, this has not yielded the reward of a substantial improvement in the precision of the results obtained. In general terms, a consensus has been reached that the labour supply of men is quite insensitive to wage changes. While some studies have reported small positive responses of male labour supply to wage increases, more

have reported small negative responses. Taking the average of the reported responses, the following conclusion is reached:

a one per cent rise in wages is associated with about a 0.1 per cent *fall* in hours worked, on the basis of U.S. data; the comparable response for the U.K. is a fall of 0.15 per cent.

Changes in nonwage income exert a small negative influence on hours worked; the reported responses suggest the conclusion that:

a one per cent increase in nonwage income is associated with a fall in hours worked of about 0.23 per cent on the basis of U.S. data; the comparable response for the U.K. is a fall of about 0.3 per cent.

This means that as income increases, more time is devoted to nonmarket activity.

The evidence on the effect of income tax changes on male labour supply suggests that tax cuts increase labour supply; consistent with the above results, the estimated effect for the U.K. is small — a seven per cent cut in the standard rate of income tax, the marginal rate for 90 per cent of prime-age males in 1981, was associated with a 0.8 per cent increase in hours worked. (Ashworth and Ulph, (1981)). However, work by Hausman in the U.S., described by Killingsworth (1983), suggested that replacing the progressive income tax code with a proportionate tax system would lead to a substantial increase in hours worked, of more than three hours per week. Recent changes in the structure of the U.S. personal tax system will provide evidence on the robustness of that result. Killingsworth also cites evidence for Sweden indicating large labour supply effects; see also Murphy (1987).

The negative income tax (NIT) experiments undertaken in the U.S. between 1968 and 1978 appear to provide an ideal source of information about the responsiveness of labour supply to tax and transfer changes. Four such experiments took place, with samples ranging in size from 809 to 4800 households. In addition to the households which participated in the experiments, other households were observed as controls. However, it has proved difficult to draw inferences from the NIT experiments, because of shortcomings in their conduct described by Pencavel (1986). The studies which have used these data yielded the conclusion that labour supply of men responds *positively* to wage increases. The positive response to wage changes was not large, but contrasts to the negative responses described above. One possible reason for this is that the temporary nature of the experiments led to somewhat exaggerated supply responses.

The evidence on male labour supply can be summarised as follows. Economic variables like wages and nonwage income influence male labour supply, but the magnitude of the responses seems to be very small; this conclusion comes from a wide variety of studies using different theoretical and empirical methods and different data sets. Furthermore, the estimates of the size of the responses are not very precisely determined. Observed variations in male labour supply appear to be due in significant measure to unobservable factors, such as tastes, nonpecuniary aspects of remuneration and so on. The fact that male labour force participation among prime-age males has declined a little in a period of large real wage increases is in sharp contrast to female labour force participation, to which the discussion now turns.

(IV) Labour Supply of Women

The significant developments in female labour supply naturally attracted the attention of researchers and policy makers, so that the bulk of recent labour supply research has concentrated on women. The labour force participation decision of women has been studied in detail in many countries. The list of explanatory variables is lengthy; most studies have used a subset of the following:

- (a) female wage;
- (b) male wage;
- (c) nonwage income;
- (d) labour market conditions;
- (e) marital status;
- (f) employment status or earnings of husband, when appropriate;
- (g) number of children;
- (h) years of education;
- (i) age

and noneconomic variables. Measures of labour market conditions that have been used include the unemployment rate, the *male* unemployment rate and vacancies.

Despite the increase in female participation, it remains the case that while many women work, many more do not. The implications of this fact for empirical research are outlined by Killingsworth and Heckman (1986). Among them are that small wage changes will have no effect on the participation of those women whose reservation wage — the wage below which they will not participate — is well above prevailing wage levels. The same would be true of small income changes. Furthermore, only the wages of women who actually work are observed. The wages obtainable in the market by women who don't work are not. Attempting to avoid the implications of these facts by focusing exclusively on working women has been shown to bias the results of empirical studies and a large amount of effort has been devoted to developing techniques which overcome this problem.

A survey of the results of studies of participation show that for most countries, higher wages are associated with higher female participation rates. The size of the effects varies across countries. Evidence for Italy indicates that a one per cent rise in wages leads to a 1.6 per cent increase in participation; the corresponding figure for the U.S. is about 0.4, for the U.K. about 0.35 and Sweden 0.30. Attempts to isolate the direct influence of education levels rather than its influence through wage rates have led to similar results across countries. No effect was isolated for Great Britain (Joshi et al (1985)). Cross-section evidence for the U.S. points to the importance of educational levels in participation but, again, an effect independent of wages is hard to detect. Comparable results are reported for other countries; in fact, educational levels are often used as a proxy or substitute for female wage rates. The effect of husband's earnings on married women's participation rates is found to be negative in most cases, as is the effect of family size. Nonwage income also exerts a negative influence on female participation.

A number of the studies of female participation make the point that the observed variation is only partially accounted for by the type of variables discussed here.

Joshi et al (1985) point to two developments in particular, which have occurred since World War II. The first is the fall in the real prices of domestic appliances, processed foods and what they call "easy care fabrics", which considerably reduces the amount of time needed to maintain a home at a given standard. The second is the fall in morbidity of children, which reduces the risk to employers in hiring women by increasing the reliability of female labour supply. They also note, as do the authors of other studies, that long-term changes in the roles women perceive for themselves may be an important part of the process of the growth of female participation rates (Joshi et al, p.49).

In comparison to the results obtained for males, which indicated very limited responsiveness, the evidence surveyed by Killingsworth (1983) indicated that *hours worked* by women were much more responsive to wage rates, and that increased wages typically led to increased hours worked. The range of the estimated responses in U.S. studies, however, was embarrassingly high. A few studies found that the response of hours worked to wage changes was comparable for women and men, while others found that a one per cent increase in wages was associated with a 15 per cent increase in hours worked! The evidence from U.K. studies also produces a range of responsiveness from small negative to significant positive, but it is not as wide as for the U.S. (It should be observed that there are fewer data sources in the U.K. and a smaller volume of research.) In most cases, though, the estimated responses were of the order of a 0.5 to 1 per cent increase in hours worked. In brief, it was concluded that

the responsiveness of hours worked by women to a change in wages is *positive*, and *in magnitude* more than five times greater than the responsiveness of hours worked by men.

The range of estimates of the responsiveness of hours worked to changes in nonwage income, however, is much lower and quite similar to the results for men:

a one per cent increase in nonwage income is associated with a 0.2 per cent fall in hours worked by women.

The evidence from the negative income tax experiments in the U.S. supports the conclusion that female labour supply is more responsive to wage and income changes than male labour supply but the possible problems associated with these data sources have already been noted.

The robustness of these conclusions, especially the former one, was placed in doubt by important work by Mroz (1987). He subjected some influential U.S. studies to very detailed scrutiny and relaxed various assumptions on which they were based. He concluded that the responses of hours worked by women were smaller than previously thought and thus challenged what has become a widely held view of the empirical evidence. It is much too early to say how much this view will have to be revised but it is an example of what can emerge from the kind of intensive research activity which is taking place in the area of female labour supply.

It should be noted that most models of female labour supply treat marital status and fertility as exogenous determinants of labour force participation and hours worked. However, as is cogently argued by Montgomery and Trussel (1986), decisions about marriage, children and labour supply are properly regarded as being jointly determined; labour supply decisions influence and are influenced

by decisions about marital status and fertility. To date, not much progress has been made on what Montgomery and Trussel describe as the "difficult and potentially rewarding alternative" of modelling "the joint evolution of the demographic and labour supply variables" (p. 266).

(v) Retirement

It is clear from the facts presented in section (i) that earlier retirement is a feature of most European and North American societies and that this is especially so for men. The small increase in life expectancy which has occurred in the postwar period implies a further increase in the number of years spent in retirement. While earlier retirement is a common feature, it remains true that there are considerable variations in labour force participation of the over 65's across countries. For example, for males over 65, the participation rate in the U.S. in 1982 was 18 per cent; in 1981 the corresponding figures for the U.K. and Germany were 11 and 7 per cent, respectively.

Models of retirement have been surveyed by Lazear (1986). As might be expected, the main framework used is similar to that used to analyse labour supply decisions. Emphasis is placed on such factors as the nature of the social security system, the connection between earnings, pensions and retirement, the importance of the family context, the effects of uncertainty about income in current employment or about health and, of course, differences in individual attitudes to retirement and its consequent leisure time. However, as Lazear observed, there are constraints on retirement behaviour; for example, mandatory retirement at age 65 or 70 is widespread. This raises the question of why mandatory retirement exists. Lazear's work on this subject develops the relationships between mandatory and voluntary retirement, earnings and pensions. They are developed in terms of the connection between the earnings profile of a worker with long tenure and the firm's desire to obtain efficient effort from the worker over the full period of employment. For a summary, see Lazear (1986), p. 320-324.

Most of the empirical studies of retirement have been done in the U.S. in the past decade, reflecting the changing age distribution of the U.S. population. A major preoccupation has been the effect of the detailed provisions of the social security system on retirement. The evidence suggests that higher social security entitlements are associated with earlier retirement; a study by Boskin (1977) claimed that the social security system was the main reason for earlier retirement in the U.S. There has also been work done on private pension schemes, whose importance grew dramatically in the U.S. in the post-war period. A crucial difference between private pension schemes and social security is that the former are more directly related to the wages received by individuals during their working lives. The value of pensions usually depends on retirement age: in some schemes, pensions decline with delayed retirement, which would encourage retirement. On the other hand, pension values and wages are usually positively related; higher wages might be expected to discourage retirement. In such circumstances it is not surprising that the empirical evidence about private pensions and retirement is mixed; when the combined effect of retirement on wages and pensions is taken into account, the plausible result is obtained that the lower the true monetary wealth arising from staying at work, the more likely is retirement.

(vi) Conclusion

This concludes the selective review of recent international research on labour supply. Male labour supply has been shown to be unresponsive to wage changes, female labour supply had been shown to respond positively to wage changes and both respond negatively to changes in nonwage income (which includes social welfare payments) in most studies in most countries; for women, the effect of wage changes dominates the effect of income changes. Since real wages have risen steadily during the postwar period, this suggests an explanation for the observed increase in female labour supply. The precision with which the responses have been estimated and their magnitude is open to question, however.

It is evident that a large amount of work has been done but that much still remains to be done. That this perception is shared is confirmed by the following statements. The first, by Pencavel (1986), concludes his exhaustive survey of research on the labour supply of men:

"A great deal of research, much of it careful and some of it ingenious, has been undertaken on male labor supply during the past two decades. The vast proportion of that work — both that based on the static model and that based on the life-cycle model — indicates that the elasticities of hours of work with respect to wages are very small. In other words, the focus of most economists' research has been on behavioural responses that for men appear to be of a relatively small order of magnitude ... given the substantial resources that have already been directed (in the U.S.) towards measuring the effects of wages on work behaviour and given the relatively small responses to wages that have been estimated for men, it would be useful if economists redirected some of these efforts into accounting more satisfactorily for variations in labor supply that are associated with other variables. In particular, because only a relatively small proportion of the variation in hours of work of prime-age men in the population is removed by the set of variables on which information is collected in most surveys, we need to know more about what this 'unobserved heterogeneity' represents There is a great deal that we do not know and that is waiting to be discovered." (p.94-95)

The second concludes the survey of Killingsworth and Heckman (1986) of research on the labour supply of women:

"Six years ago, Heckman, Killingsworth and MaCurdy (1981, p.108) commented that elasticity estimates obtained using recently developed econometric techniques had increased the mean of what might be called the "reasonable guesstimate" of the wage-elasticity of female labour supply. Work since then seems to have reduced the mean and substantially increased the variance of this guesstimate. Regarding future research, we borrow from Samuel Gompers' characterization of union objectives, and advocate 'more.'" (p.196-197)

3. EMPLOYMENT

(i) Background

Research on the determinants of employment differs from research on labour supply in a number of respects. The relative absence of and limited nature

or access to data sets at the level of the individual establishment has meant that it has lacked the particular stimulus which contributed so much to work on labour supply. Instead, it has employed time series data, typically at the aggregate level (i.e. manufacturing, total industry or the economy). Since such data are available in many countries, there has been a series of cross-country studies of employment which allow a comparison of results for most economies of the OECD. Another difference is that most studies of employment do not distinguish between men and women. The nature of research on employment is clearly dictated by the types of data which are available.

The contrasting experiences of North American and European economies in the last twenty years have provided the major impetus to the study of employment and, as observed below, unemployment. In broad outline, the facts are well known: the U.S. has experienced steady growth in employment in that period while employment in Europe has stagnated. The growth rates of employment in a selection of OECD countries are presented in Table 4. The difference between North America and Europe is striking; total employment in the U.K. and France was less in 1986 than in 1979 and unchanged over the period in Germany.

TABLE 4
% Annual Growth Rates of Employment 1973-1986

	1973-75	1975-79	1979-83	1983-86
U.S.A.	0.4	3.4	0.5	2.8
Canada	2.9	2.8	0.8	2.7
Germany	-2.1	0.2	-0.7	0.7
France	0.0	0.5	-0.2	-0.3
Italy	1.1	0.7	0.4	0.5
U.K.	0.0	0.4	-1.8	1.1
OECD Europe	0.0	0.4	-0.3	0.7
Japan	-0.3	1.2	1.1	0.7

Sources: OECD Employment Outlook, September 1987, Table A.

(ii) Dynamic Models of the Determinants of Employment

The most widely adopted approach to the study of employment has been to identify it with the demand for labour. This assumes that it is the decisions of employers which determine employment, given expected costs and returns; employers are assumed to be able to satisfy their demands for labour. This approach can accommodate different assumptions about the labour market; wage rates may be determined in competitive markets or be negotiated between employers and unions. Since vacancies represent evidence of unsatisfied demand, this approach effectively ignores them. Poor data on vacancies and their relatively short duration are sometimes mentioned as reasons for doing so, but the relationships between vacancies and unemployment has been studied. For an interesting analysis of vacancies, see Roper (1986).

The emphasis in recent research has been on dynamic models of labour demand. These models are based on the assumptions that firms maximise the present

value of profit (or minimise the present value of cost) and that varying the number of employees involves costs distinct from the wage. In particular, both hiring and firing are costly. The costs of firing include various forms of compensation, some of which are statutory, like severance and redundancy payments in many countries, others which are not, such as golden handshakes. In addition, an output loss may arise because of the process of replacement. The nature of these costs of adjusting the level of employment is such that they depend on the kind of employees involved; they will be lower for unskilled labour than for highly skilled, professional or managerial labour. It is also generally assumed that the greater the rate of hiring or firing, the greater the increase in the associated costs. Nickell (1986) suggests that on the basis of U.K. evidence, adjustment costs amount to between two days and two weeks pay for blue collar workers and between two weeks and two months pay for white collar workers.

Within this framework, the demand for labour depends not only on *current* levels, but also on *expected* levels of the following variables:

- (a) the cost of labour;
- (b) the cost of other inputs, such as capital, energy and materials;
- (c) the financial situation of the firm;
- (d) conditions in output markets.

The cost of labour includes employment taxes, like employer's PRSI, and other costs and subsidies. The treatment of energy and materials prices varies. Some studies include the appropriate prices as explanatory variables. Others measure the real cost of labour to firms (the "product real wage") in terms of the price of *value-added* and thus do not include energy and materials prices explicitly. Much recent research does not contain direct evidence about the effect on employment of changes in the cost of capital. For reasons related to the assumed slow speed of adjustment of capital, it has been common to include the quantity of capital as an explanatory variable in labour demand equations (and sometimes to impose the assumption of long run constant returns to scale). The literature on the long run demand for labour addresses this question and it is discussed below, as is the relevance of firm's financial situation. Conditions in output markets are dealt with in different ways. When competition is assumed, they are represented by the price of output and appear as part of the *real* cost of inputs. However, much of the U.K. literature assumes the existence of monopolistic competition in output markets, so that firms have discretion over their prices. In these models, output market conditions are also represented by explicit measures of output.

The fact that *expected* levels of these variables influence current employment decisions poses problems for doing empirical work with a solid conceptual basis. Some studies have focused on the modelling of expectations, but many more have dealt with them in a simplified or *ad-hoc* manner. The models which are estimated include as explanatory variables lagged values of employment; they represent the dynamic adjustment process of employment.

(iii) Dynamic Models of Employment: Results

Evidence on the dynamics of employment suggests that they are quite complicated and that the response of employment to changes in input prices or to other shocks is slow. The fact that expected costs are relevant to firms'

decisions is one reason for this, another is that it pays to economise on adjustment costs by spreading the process of employment change over a number of periods, which is facilitated if the number of hours worked is flexible. Because of this, the measured impact effects on employment of changes in labour or other costs can be much smaller than the total effects.

The question of whether output demand conditions exert an influence on labour demand directly as well as through output prices has been the subject of conflicting findings. As already noted, if the labour and output markets can be modelled as competitive ones, output market conditions are accounted for by output prices. If, however, the output market has monopolistic elements, an appropriate measure of output demand conditions should also be included as an explanatory variable. Newell and Symons (1985) claim that output prices alone capture the influence of output market conditions in their study of the manufacturing sectors of OECD countries but Layard and Nickell (1985, 1986) and Bean, Layard and Nickell (1986), find evidence of a separate role for output demand variables in explaining employment in the U.K., the U.S., and some other countries.

A selection of the results reported in recent studies appears in Table 5. For each country, estimates of percentage impact and total effects of a one per cent rise in real wages are presented. Most of the studies use a value added measure of output price so that the price of materials and energy are not included as explanatory variables.³ Whether an output demand variable or the real interest rate is included, is noted. The inclusion of the latter has been strongly urged by Newell and Symons (1987a), who found that it exercised a significant negative effect on employment.

The estimated effects show some sensitivity to the inclusion of a demand variable and the real interest rate. The total or long run effects in the Bean, Layard and Nickell study are generally smaller than in the two Newell and Symons studies. Bean et al. find that for most countries, the total effect of a one per cent increase in real wages is a fall in employment of between 0.5 and 1 per cent, the average of the eighteen countries they considered was 0.6 per cent. The impact effects averaged a fall of 0.36 per cent, but the difference between impact and total effects is large in countries like France, Ireland and Japan.

The results obtained by Newell and Symons suggest appreciably larger total or long run effects in some countries. This is particularly true of the U.K., Germany, Sweden, Switzerland and Canada. The difference between impact and total effects is an indication of slow adjustment of employment to shocks, so that it has considerable relevance for policy. That the different models should lead to, at times, large differences in the estimated long run effects must be borne in mind in applying them. Despite that, there is a reasonable degree of consistency for a number of countries and at the aggregate OECD level.

It should be noted that these studies consider labour demand in the context of models designed to explain unemployment; other aspects of their results will be discussed later. This is one reason why labour demand is specified in terms of numbers of employees rather than total hours worked. Most of the variation in total hours is in fact due to fluctuations in numbers rather than in average hours; the latter do not vary as much, especially in annual data. Furthermore,

the appropriate measure of labour cost when hours are considered is marginal labour cost, for which data are hard to obtain at the aggregate level.

TABLE 5

% Responses of Employment to 1% Rise in Real Wages

	Study	Impact Effects	Long Run Effects	Demand Variable	Real Interest Rate
U.S.A.	BLN	-0.61	-0.48	/	
	NS1	-0.54	-0.70		
	NS2	-0.26	-0.70		/
Canada	BLN	-0.35	-0.42	/	
	NS1	-0.19	-2.14		
Germany	BLN	-0.53	-0.47	/	
	NS1	-0.26	-2.23		
	NS2	-0.37	-1.70		/
France	BLN	-0.17	-0.62	/	
	NS1	-0.05	-0.51		
Ireland	BLN	-0.30	-1.03	/	
	NS1	-0.21	-1.49		
Sweden	BLN	-0.55	-0.66	/	
	NS1	-0.31	-1.33		
	NS2	-0.24	-1.10		/
Switzerland	BLN	-0.83	-0.94	/	
	NS1	-0.58	-3.56		
U.K.	LN	-0.29	-0.94	/	
	BLN	-0.40	-0.63	/	
	NS1	-0.54	-0.70		
	NS2	-0.41	-2.40		/
Japan	BLN	-0.36	-1.02	/	
	NS1	-0.15	-0.88		
	NS2	-0.12	-1.00		/

Sources: BLN: Bean, Layard Nickell (1986), Table 3; data period 1956-1983 LN: Layard and Nickell (1986), Table 4; data period 1956-1983 NS1: Newell and Symons (1985), Table 6a; data period 1955-1981 NS2: Newell and Symons (1987a), Table 11; data period 1955-1983

Demand Variable: / indicates that this variable was a regressor.

Real Interest Rate: / indicates that this variable was a regressor.

All studies use annual data.

(iv) Demand for Labour in the Long Run : Models and Results

The study of labour demand in the long run is often concerned with the relationship between inputs in the production process. Such questions as the degree of substitutability between different types of labour, between labour and capital, or capital and energy, are addressed; the answers to these questions have a direct bearing on the long run behaviour of employment. It is common

in this literature to treat output as predetermined; the explanatory variables are then:

- (a) the cost of labour;
- (b) the cost of capital;
- (c) the cost of energy and materials;
- (d) the level of output.

Labour demand responses to input price changes in this framework are thus conditional on the level of output; they represent changes in how to produce output, given the output level, and thus take no account of the fact that input price changes typically lead firms to change their output levels. Because of this the size of the estimated responses of employment to a change in labour costs should be smaller than those obtained in the studies described earlier, *ceteris paribus*.

Hamermesh (1986) surveys work of this type. He describes the details of the models and summarises the results obtained using data from OECD economies. Estimates of the long run aggregate employment response to wage changes, conditional on output, indicate the following conclusion:

a one per cent increase in wages is associated with a fall in employment of between 0.15 and 0.5 per cent.

He comments that "while this range is fairly wide, it does at least put some limits on the claims one might make for the ability of, for example, wage subsidies, to change the relative labour intensity of production at a fixed rate of output. These limits narrow the debate over what the likely effects would be of any change imposed on the economy that affects the demand for labour" (p.453). As expected, these responses are smaller than those reported above. Results obtained at more disaggregated levels broadly conform to the aggregate ones.

Some U.S. studies distinguish between "production" and "non-production" workers. The estimates of the response of each type of employment to wage changes depends on the model used. There is no clear evidence that the demand for one type of labour is more wage-responsive than the other but the range of estimates obtained is large. Morrison and Berndt (1981) for example, report that demand for both production and non-production labour is highly wage sensitive, with the former more wage sensitive than the latter — a one per cent wage rise is associated with a 2.3 per cent fall in production labour and a 1.6 per cent fall in non-production labour. Other studies, however, yield results more in line with the aggregate results for both types of labour.

The relationship between employment and output is estimated in some of these demand models. Long run constant returns to scale, which is typically assumed, implies that a one per cent rise in output leads to a one per cent employment response in the long run. However, Morrison and Berndt report short-run and intermediate run responses. The phenomenon of short run increasing returns to labour is observed in strong measure for non-production labour, while short run decreasing returns are observed for production labour. Short run increasing returns means that a one per cent increase in output is associated with a substantially smaller increase in employment, which implies that output is more variable than employment. This has been interpreted as evidence of the existence

of labour hoarding, the practice of retaining more workers than output demand would dictate in bad times and hiring fewer new workers in good times. If non-production labour is identified as managerial and skilled and production labour as less skilled, the Morrison-Berndt result is plausible; the greater the amount of training embodied in a particular type of labour, the more likely is labour hoarding to be observed.

(v) Other Approaches

Rather than view employment as all the studies reviewed above do, as the outcome of the decisions of employers, subject to negotiated or market wages and other costs, it could be viewed as the outcome of bargaining between employers and unions. This requires the objectives of unions as well as firms to be modelled. It is common to model unions as being concerned about wage rates, employment and the alternative wage of union members, which refers to the wage obtainable elsewhere. Recently, attempts have been made to discriminate between these approaches. An interesting example is by Nickell and Wadwhani (1987), which uses U.K. data.

Their study has several notable features. An important one is that they use data at the level of the individual firm; their data cover 219 firms for the period 1974 to 1982. Another is they include financial factors as determinants of employment. Among them are the borrowing ratio (the debt-equity ratio), income gearing (the proportion of gross profits paid out as interest), the market value of equity and liquidity ratios. Clearly, the use of firm level data greatly facilitates the inclusion of financial variables. Their findings lend support to the view that these variables are important. They also support a modified version of the labour demand approach to employment determination. The modification draws on the concept of efficiency wages, which may involve firms paying wages in excess of the alternative wage to encourage productivity. Their estimates of the wage responsiveness of employment, however, are appreciably lower than those obtained for the U.K. at the aggregate level, as reported in Table 4. They find that a one per cent increase in wages is associated with a fall in employment of 0.35 per cent in the long run, about one-third of the response in Table 5.

(vi) Conclusions

Hamermesh concludes his survey of work on long run labour demand with the observation that despite the advances which have been made in analysing it, much remains to be established about the magnitudes of the response of employment to changes in wages and other variables. It is hard to dispute this point. He emphasises that making the appropriate allowance for supply influences in analysing and estimating models of labour demand is a matter of high priority. Nickell and Wadwhani conclude that

"we are conscious that our results in this case are rather mixed, suggesting that we still have a great deal to learn about what really determines wages and employment." (p.24)

This conclusion is arrived at after the substantial research effort described in this section. The similarity between it and those quoted earlier is obvious; the implications for policy are discussed in section 5.

4. UNEMPLOYMENT

(i) Background

To understand unemployment it is necessary to understand what determines employment and the supply of labour. The extent to which progress has been made on these issues has been described. But the existence of differences between the level of employment and the supply of labour raises questions about how labour markets function. The basic facts about these differences i.e. unemployment, are presented in Table 6. This shows that since 1973 the general trend of unemployment rates in North America and Europe has been upwards. In Europe, however, the increase in unemployment has been much greater; further, in the 1980's the persistence of high unemployment in Europe has been striking and European rates have exceeded those in the U.S., a reversal of the experience of much of the last two decades.

TABLE 6

	Standardised Unemployment Rates (per cent)					
	1973	1975	1979	1982	1984	1986
U.S.A.	4.8	8.3	5.8	9.5	7.4	6.7
Canada	5.5	6.9	7.4	10.9	11.2	9.5
Germany	0.8	3.6	3.2	6.1	7.1	6.9
France	2.6	4.0	5.9	8.1	9.7	10.3
Italy	0.2	5.8	7.6	9.0	10.2	—
U.K.	3.0	4.3	5.0	11.3	11.2	11.1
OECD Europe	2.7	4.0	5.4	8.9	10.1	10.1
Japan	1.3	1.9	2.1	2.4	2.7	2.8

Source: OECD Employment Outlook, September 1987, Table 5.7.

The implications of recorded unemployment rates depend on the duration and incidence of unemployment. This can be seen from the fact that a given annual rate of unemployment is consistent with quite different circumstances, one in which a particular group of people is out of work for the whole year and another in which different groups are out of work for part of the year. The explanations and policy implication of these two circumstances are likely to be very different. The evidence from both North America and Europe, which is presented in Table 7, is that the duration of unemployment is a lot longer in most European countries. Further, a substantial part of unemployment in both Europe and North America is accounted for by long spells of unemployment. The incidence of unemployment also differs across different groups depending on such characteristics as age, colour, skill level, industry and region. These facts have been well documented in many countries and they are observed in times of low as well as high average unemployment. Cross-country differences in these respects are less pronounced than similarities.

TABLE 7

Incidence of Long Term Unemployment (12 months and over)

	% of Total Unemployment			
	1979	1982	1984	1986
U.S.A.	4.2	7.2	12.3	8.7
Canada	3.5	5.3	10.1	10.9
Germany	19.9	21.2	32.7	32.0
France	30.3	42.1	42.3	47.8
Italy	35.8	37.8	50.0	56.4*
U.K.	24.8	33.6	39.8	41.1
Japan	16.5	14.9	15.2	17.2

Sources: OECD Employment Outlook, September, 1985, 1987.

*Data are for 1985.

(ii) Models of Unemployment

Naturally, a lot of effort has been devoted to accounting for these facts and a variety of models has been proposed. They include models based on the supply of and demand for labour which assume that, in the absence of regulation, long run supply and demand will be equal; there are also models in which wages are set by firms at levels which lead to excess supply of labour, because of the need to attract, retain or motivate workers i.e. efficiency-wage models of unemployment. However, the most widely applied models highlight the role of trade unions in wage and employment determination; some assume that the whole economy is unionised, others that there are union and nonunion sectors.

Most studies of unemployment are concerned with unemployment in the long run; some deal with the variability of unemployment over the business cycle. Empirical work on the growth of the long run unemployment rate (also referred to as the "equilibrium" or "natural" rate of unemployment) involves two stages. The first is to estimate the long run rate of unemployment itself; the second is to account for the behaviour of that rate. The long run or equilibrium rate is usually defined as the rate of unemployment which would be observed if actual and expected real wage growth are equal.⁵ For all countries in the OECD this estimated rate has increased in the last fifteen years; as Table 8 shows, it has more than doubled in the U.K., Germany, France but increased much less in the U.S. and Japan.⁶

The most complete attempt to account for the rise in unemployment has been undertaken by Layard and Nickell for the U.K. in a series of papers; see Layard and Nickell (1986, 1987) and the reference cited there. A version of their model was applied to eighteen OECD countries by Bean, Layard and Nickell (1986). The results of their labour demand function estimation were discussed in the previous section; here the structure of their general model is described and the variables which determine the unemployment rate are listed.

TABLE 8

Estimated Long Run Unemployment Rate (%)		
	1973	1983
U.S.A.	5.3	6.9
Canada	5.4	8.5
Germany	0.8	3.5
France	3.1	8.1
U.K.	2.7	6.5
Japan	1.3	1.8

Source: Johnson and Layard (1986), Table 16.13

The structure of the Layard-Nickell models is as follows. The supply side consists of equations for employment, prices, wages and output, and the demand side consists of an equation for aggregate sales. The employment relationship has already been dealt with; it is a labour demand equation. Prices are set by firms on the basis of the expected demand for their output and the cost of labour; the pricing rule is expressed as a mark-up on expected marginal costs, where the mark-up depends on output demand conditions. Wage determination is modelled so as to be consistent with different wage setting mechanisms, ranging from competition to firm-union bargaining, since all sectors of the economy may not use the same mechanism. The result is a real wage relationship in which real wages depend on the set of labour supply side influences described in section 2, output demand conditions, union power, the capital-labour ratio and other variables. The relationships for employment, prices and wages, are central to the explanation of unemployment. The list of determinants of unemployment thus includes:

- (a) trade unions, through their effect on real wage pressure;
- (b) the tax wedge, the combination of direct, indirect and employment taxes;
- (c) import prices;
- (d) the replacement ratio, the ratio of income in unemployment to net income in employment;
- (e) changes in the structure of labour demand;
- (f) changes in the willingness to accept jobs;
- (g) employment laws and minimum wage laws;
- (h) changes in the terms of trade and productivity growth;
- (i) demand factors, measured as demand relative to total potential output.

In their empirical work, Layard and Nickell focus on the increase in the *male* unemployment rate, because of changes in the female rate caused by changing entitlements. The increase in the male rate between 1956 and 1983 was 11.8 per cent, 7.11 percentage points of which is regarded as due to an increase in the long run unemployment rate. In addition to accounting for the rise in unemployment over the whole period, they examine changes between the following sub-periods, 1956-66, 1966-74, 1975-79 and 1979-83. Their findings are summarised in Table 9, which refers to the increases in actual male

unemployment and the long run rate. For the period 1956 to 1983, more than half (7.2 per cent) of the increase in male unemployment they attribute to demand factors, which include government fiscal policy, world trade and output price competitiveness. The replacement ratio, which rose in the U.K. through the 1970's but has fallen since then, accounts for only 0.44 points. The measurement of the effect of tax changes is made difficult by the fact that who actually bears the burden, (i.e. the incidence of taxes) can differ considerably from who apparently bears it. This is because firms, for example, may pass on the cost of taxes in terms of higher prices. Notwithstanding this difficulty, Layard and Nickell attribute 1.1 percentage points of the increase of unemployment to employers' labour taxes. Structural factors, represented by a mismatch between the skills of the unemployed and the skills demanded by firms, account for 0.85 of a percentage point. The union variable, which represents real wage pressure, accounts for 3.15 per cent of the increase.

The results for changes between the subperiods reveal some interesting differences. For example, the role of demand factors is confined almost entirely to explaining the increase in unemployment in 1980-83 over 1975-79 and it accounts for 90 per cent of that. The union-generated real wage effect is spread across the sub-periods, but its relative contribution is large in the earlier periods. Replacement ratio effects are significant in accounting for the increase in unemployment between 1956-67 and 1967-74 but are insignificant after that. Higher commodity and oil prices raised unemployment between 1967-74 and 1975-79 but lower prices lowered unemployment at other times, so that their effect overall was negligible. At no time did employment protection legislation have a discernable net effect.

The factors which are used to account for the increase in the long-run unemployment rate exclude output demand but include the effects of U.K. oil production. Union-generated real wage pressure and employment taxes make a significant contribution to the increase in the long run rate; it is interesting to note the increased importance of structural factors (i.e. mismatch) at the end of the period. Oil production is estimated to have reduced the long run unemployment rate by two per cent.

The application of the same type of model to data from eighteen OECD countries by Bean, Layard and Nickell (1986) has been referred to. Their "unemployment-accounting" exercise is less detailed than that just described; evidence for some countries is presented in Table 10 and it shows considerable variation.

"Search" refers to intensity of search, itself related to the operation of social welfare systems. It should also be noted that taxes include the effects of real wage pressure in this formulation.

Bean et al. conclude that demand and supply side factors appeared to contribute to the explanation of the rise in unemployment, in different degrees at different times. It's worth emphasising that the model used does not assume a competitive labour market; in fact some of its distinctive features arise from the price-setting behaviour of firms.

A different way of accounting for the increase in unemployment was proposed by Bruno and Sachs (1985). They used what has become known as the "wage-gap" methodology. The wage gap is usually defined as the difference between

TABLE 9
Breakdown of Changes in Male Unemployment Rate, U.K., 1955-1983
(percentage points)

Periods	ACTUAL RATE				LONG RUN RATE			
	1956-66 to 1967-74	1967-74 to 1975-79	1975-79 to 1980-83	1956 to 1983	1956-66 to 1967-74	1967-74 to 1975-79	1975-79 to 1980-83	1956 to 1983
Employers' Labour Taxes	0.25	0.38	0.44	1.02	0.29	0.51	0.68	1.49
Replacement Ratio	0.54	-0.09	-0.10	0.44	0.64	-0.12	-0.15	0.37
Unions	1.18	1.17	0.80	3.15	1.40	1.58	1.25	4.23
Real Import Prices	-0.58	1.47	-0.93	-0.04	—	—	—	—
Terms of Trade	—	—	—	—	0.29	2.02	-0.17	1.56
Mismatch	0.16	0.20	0.49	0.85	0.19	0.27	0.77	1.23
Demand Factors	0.12	0.54	6.56	7.22	—	—	—	—
Incomes Policy	—	-0.36	0.49	0.13	—	-0.50	0.78	0.28
Oil Production	—	—	—	—	—	-0.32	-1.73	-2.05
TOTAL	1.67	3.31	7.75	12.73	2.23	3.44	1.44	7.11
Actual Change	1.82	3.01	7.00	11.83				

Source: Layard and Nickell (1986), Tables 9,11

the actual wage and the wage consistent with full employment. If it is positive and increasing, it is argued that real wage pressure is contributing to the rise in unemployment. Bruno and Sachs reported positive real wage gaps in the 1970s, but declining gaps in the 1980s, when they attribute the increases in unemployment to lack of aggregate demand. These results are consistent with those of Bean et al. but there are grounds for questioning the use of the wage gap concept (see Schultze (1987), among others).

TABLE 10
Breakdown of Changes in Unemployment Rates 1955-1983
(percentage points)

	Taxes	Import Prices	Search	Demand	Total	Actual
U.S.A.	1.30	0.19	—	0.48	1.97	3.35
Canada	1.34	0.02	—	4.59	5.95	4.56
Germany	—	—	3.68	-0.03	3.65	4.02
France	0.46	-0.04	3.27	2.39	6.08	5.98
Ireland	3.73	-0.38	—	2.29	5.65	4.33
Sweden	1.70	0.12	-0.47	-0.49	0.85	1.04
Japan	—	—	0.59	0.06	0.65	0.63

Source: Bean, Layard, Nickell (1986), Table 4.

The rise in European unemployment since 1983, in contrast to the decline in the U.S., and its persistence at very high levels even where it has not increased, have led to further appraisals of the role of the kind of factors listed earlier. They will be dealt with in the next section, as well as the policy implications of the results described here. This section concludes with a brief account of work on cyclical fluctuations in unemployment.

The study of cyclical fluctuations in unemployment, rather than the long run increase, has attracted more interest among U.S. macroeconomists and labour economists than among their European counterparts. The relatively small increase in the long run rate of unemployment in the U.S. no doubt helps to explain this fact. The models used to explain fluctuations in unemployment (and employment) include job search models, models of "intertemporal substitution", which involve the idea that people work more when the perceived rewards are high and less when they are low, and models of labour contracts. In their summary of work in this area, Lilien and Hall (1986) observe that the development of these models is due to the fact that simple supply-demand models cannot account for the cyclical fluctuations observed in the U.S. economy. It is interesting to note that the U.S. is the only economy whose labour market fluctuations they document, but if long run unemployment declines in Europe, it is reasonable to assume that more attention will be directed at employment and unemployment fluctuations.

(iii) Conclusion

The empirical studies of unemployment described in this section point to the conclusion that no single factor can account for the experience of the economies

of the OECD over the past twenty years. At different times, different factors appear to have been relevant. A synthesis of views offered by Newell and Symons (1987b) suggests that the rise in unemployment in the 1970s was due to real wage growth, caused in part by an attempt by workers to insulate real wages from the effects of oil price rises; deflationary policies in the early 1980s exacerbated the problem; and the persistence of high unemployment in Europe has been due to the slow adjustment processes in European economies.

It must be borne in mind that the data on which these conclusions are based covers the period to 1983 in most cases; how experience since then might affect the conclusions remains to be established. However, the persistence of unemployment in Europe since 1983 has been studied and this issue is dealt with in the next section; even then, the implications of the sharp fall in U.K. unemployment in the past year have not yet been assessed.

5. LABOUR MARKET FLEXIBILITY AND LABOUR MARKET POLICY

The persistence of high unemployment in Europe since the early 1980s has led to increased emphasis on the concept of labour market flexibility. The divergent experiences of North America, Europe and Japan require explanations, which have often been sought in the incentive, institutional and legal frameworks within which labour markets operate. However, labour market flexibility is an extremely broad concept and it is worth describing the different levels at which it can apply and the issues which it encompasses.

The concept of labour market flexibility relates to the responsiveness of wages, employment and working practices to changes in market conditions. As such it operates at different levels: within firms, within industries and in the economy as a whole; it embraces institutional and other factors. This is evident from the following examples, all of which have appeared in recent studies. At the aggregate level, there is the issue of whether wages or employment or both are flexible. There is the issue of how wages and unemployment are affected by whether negotiations take place at national or local level, whether or not local ratification of agreements is required and how employers are organised and unions structured. Other issues have already been mentioned, such as the effects of employment taxes and the social welfare and tax systems.

At the industrial and occupational levels, there is the issue of how wages, employment and work practices across industries and occupations respond to relative demand differentials. If wages are completely inflexible, the process of adjustment falls entirely on employment and work practices. The questions which then arise are, first, how flexible are industrial and occupational wage structures and, second, how much is employment affected? At the level of the firm, similar issues arise. The employment dimension of flexibility within the firm is associated with job mobility within the firm, which involves retraining; it also involves such factors as job security provisions, demarcation rules and work-sharing schemes. Wage flexibility involves wage structures, profit-related pay schemes and so on.

Clearly, to describe one economy as having more flexible labour markets than

another begs many questions; economies can display different kinds of flexibility. If flexibility is equated with variability, the U.S. provides an example of an economy in which real wages are not especially flexible but employment is; the major EEC economies appear to have both real wage and employment inflexibility, while some European economies like Austria, Sweden and Switzerland have real wage flexibility.

One source of aggregate flexibility which has attracted a lot of recent attention is the system of wage bargaining. European experience, in particular, has been interpreted by some writers such as Newell and Symons (1987a) as indicating that centralised or "corporatist" wage setting mechanisms produce *greater* flexibility at the economy-wide level than decentralised systems.⁷ Austria, Sweden and Switzerland are three examples of countries which have corporatist wage setting systems; Japan has also had a form of corporatism since the 1970s. (A detailed account of the Swedish system is provided by Flanagan (1987a)). It is argued that because of the centralised nature of the negotiation process these economies were able to adjust much more effectively to the external shocks which occurred in the 1970s than others. The collapse of such systems in the 1980s in Germany, the U.K. and Belgium is blamed for the real wage inflexibility of these economies and their persistent unemployment. Germany has had an especially large increase in unemployment since 1983 and German economists now complain about the lack of flexibility in their labour market. Labour market flexibility is thus distinct from decentralisation.⁸

The United States, however, is emphatically non-corporatist but, as already mentioned, it has employment flexibility. Short term lay-offs are more common in the U.S. than in Europe and Japan where short time working is more likely to be observed. Whether this is due to the U.S. unemployment insurance system, legal restrictions in Europe and Japan or other factors is not resolved; neither is the importance of the U.S. system of long term wage contracts for the apparent lack of real wage flexibility, because of the small proportion of the labour force that is unionised. Newell and Symons argue that corporatist economies have coped better with both employment shocks, arising from a change in the real interest rates, and wage shocks due for example to a change in the tax wedge; a "laissez faire" economy like the U.S., on the other hand, copes better with employment than wage shocks. However, they have been accused of considering only the positive aspects of corporatism. As Summers (1987) wrote,

"It is no doubt true that it is easier for the government to negotiate about wages with one rather than many unions. This is the economic case for corporatism. The case against it is that where unions are cohesive, strong and able to speak for the entire labor force they are more likely to be able to legislatively impose unfavourable terms on employers. It is no accident that unions are much more powerful in Europe than in the United States and that Europe has much more onerous provisions restricting employers' ability to lay off workers. Nor is the greater generosity and duration of unemployment insurance benefits in Europe independent of the highly unionized character of the workforce. Moreover, where corporatist unions can prevent new non-union plants from starting up, the elasticity of demand for labour is reduced and so wage pressures are magnified.

It is noteworthy in this regard that heavily unionized Europe has been

much less successful in avoiding unemployment in the last two decades than has the United States or Japan. Quite likely, this reflects the fact that unions are less strong in the United States and Japan than in Europe. Weak corporatist unions are probably the ideal wage setting institution. However, measures which encourage corporatism may also raise union power. They may therefore be counterproductive.”

This statement raises a number of questions. The measured effect of union-generated real wage pressures on unemployment in Layard-Nickell models was significant, but to what extent do they account for the persistence of unemployment since 1983? Schultze (1987) concludes that with the possible exception of the U.K., the unemployment rates experienced in some European economies in the last five years cannot be accounted for by real wage pressures. The recent U.K. experience is the subject of a detailed examination by Layard and Nickell (1987). They point to the fact that not only has the long run rate of unemployment in the U.K. increased but that the proportion of that rate accounted for by the long term unemployed has risen sharply. The inflow into unemployment stabilised, at levels appreciably higher than in the late 1970s but, interestingly, *lower* than in the late 1960s. However, the outflows fell sharply after 1983. One possible reason for this is discussed below. Its effect, though, is regarded as allowing real wage pressure to be maintained, because the long term unemployed are seen as effectively having withdrawn from the labour force and thus do not exert downward pressure on wages. Hence the unemployment rate consistent with stable inflation in the *short-run* has increased in the U.K. relative to that associated with stable inflation in the long run. High long term unemployment is seen as permitting real wage inflexibility which contributes to the persistence of high unemployment.

The effect on labour market performance of the degree of centralisation in wage bargaining is considered in two recent papers by Calmfors and Driffill (1988) and Freeman (1988). The former propose a model in which there is a hump-shaped relationship between the degree of centralisation in wage bargaining and real wages. Thus, highly centralised and decentralised systems lead to lower real wages, and hence higher employment, than intermediate ones, which contrasts with the view that increases in centralisation lead to better outcomes. Both Calmfors and Driffill and Freeman present evidence from a range of countries which appears to support these ideas but it is not conclusive; more detailed empirical testing and further model formulation are required.

A more central role is accorded to union behaviour in a competing hypothesis to account for the persistence of high European unemployment, now frequently referred to as “hysteresis”. This has been advanced by Blanchard and Summers (1986), among others. It involves a distinction between “insiders” and “outsiders”, closely related to the unionised and non-unionised sectors of the labour market.

The basic argument is that unions set wages so as to maintain the employment of their members (the insiders). If their members are employed while labour market conditions in the economy remain unfavourable, the wages claimed by unions will be determined by the former rather than the latter fact. Thus, wage claims will not be much influenced by economy-wide level of unemployment; sustained periods of low or high unemployment will lead to comparable insider

wage levels. Only if the employment of the insiders is threatened will the unions adjust their wage claims. Hence real wage pressure may be maintained despite high unemployment, as long as the unionised sector is insulated from its effects. The relevance of insider-outsider arguments as explanations for the persistence of employment is disputed, but no consensus yet exists on this issue.

Two frequently cited sources of inflexibility are the system of unemployment insurance and the code of employment protection and trade union protection laws which exist in most European countries. Evidence described in the previous section suggested that the replacement ratio was a modest contributor to the increase in U.K. unemployment, but it has often been suggested that the generosity of European unemployment insurance systems relative to those in the U.S. may account for the divergence of their unemployment rates. Burtless (1987), however, surveys the evidence on this proposition and rejects it, although he accepts that it may contribute to the slower adjustment of European labour markets to shocks. In a comment on this paper, Nickell notes that European unemployment insurance schemes have not generally become more generous since 1983, making it hard to attribute to them the higher unemployment of those years. In fact, in the U.K. the replacement ratio has fallen while unemployment rose until 1986.¹⁰ However, what is sometimes referred to as the “choosier employee” argument has been advanced in the U.K. by Layard and Nickell (1987) as one source of the higher level of notified vacancies which coexists with high unemployment. In essence the *operation* of the social security system, rather than the level of benefits, is blamed for reducing the intensity with which the unemployed search for work and their willingness to accept offers.

It has already been noted that there is little quantitative evidence on the importance of employment protection laws as causes of unemployment. One reason is that they raise the costs of both hiring and firing and thus, while they may discourage hiring, they also discourage firing. This suggests that in the long run such laws will have an effect, and it is one argument for what is referred to as the “choosier employer” explanation of stagnating employment in Europe. Another, proposed by Flanagan (1987b), is that European wage distributions have become compressed. His argument is as follows. Once hired, workers are hard to fire; thus the costs to firms of making a hiring error can be large. If firms are able to offer new employees steep earnings profiles i.e. low initial earnings followed by much higher earnings if they warrant it, they will discourage those who are unlikely to succeed or who are not interested in long tenure employment. If earnings profiles are compressed, firms are forced into expensive screening processes to insure themselves against the risk of making bad hires. Flanagan also presents an interesting comparison of European and American employment laws. He concludes that the effective difference between them is less marked than is commonly assumed, which dents the argument that European employment protection laws contribute significantly to the divergences of the U.S. and European unemployment rates.

A useful survey of the literature of labour market flexibility is provided by Metcalf (1987). He examines recent work on flexibility at the aggregate, industrial and firm levels. The evidence on the relationship between employment and wage flexibility is inconclusive; so is the evidence on firm-level flexibility as an

explanation of the performances of European, U.S. and Japanese labour markets." He summarises his findings as follows:

"relative wages move sluggishly and so play only a minor role in any (employment) adjustment process.

Movements in the industrial wage structure augment employment under two sets of circumstances. First, if they reflect competitive forces. There is little evidence that this has been happening in recent years in U.S., U.K., Sweden, France and Canada but it might be the case in Japan. Second, if relative pay changes are related to movements in value productivity but are more flexible downwards than upwards. This appears to have been the case in the United States and Sweden.

Unskilled people suffer higher unemployment rates than the skilled (but) the higher unemployment rates of the unskilled cannot all be put down to labour market rigidities. There is a strong case for state intervention via employment subsidies and state finance for training to make the unskilled labour market more adaptable. Labour market flexibility will not be achieved by withdrawing the state from its proper functions.

..... while Europe has less external mobility than the United States and less internal mobility than Japan it is simply not possible to state dogmatically that insufficient mobility is or is not a cause of high European unemployment levels."

The policy dimension of the literature on labour market flexibility is limited by the nature of the conclusions which have been yielded so far. Much of the literature concerns the effects of policies implemented in the 1960s and 1970s, when unemployment was much lower than it is now. But attempts to establish the extent to which those policies contributed to the outcomes now being experienced have not been decisive and thus have not produced clear-cut policy recommendations. The type of questions posed by the flexibility issue will probably remain very difficult to settle without serious resort to evidence at the level of the individual decision makers in the market i.e. firms and workers. This point is made with increasing frequency.

The policy implications of the literature on unemployment and employment, however, are worth considering. A feature of the conclusions emerging from the work of Bean et al. (1986) and the other papers described in sections 3 and 4 is that changes in labour supply have *not* been a source of the increase in unemployment. This, at first sight, might seem to be a glaring omission, but a consideration of the evidence suggests otherwise. As Bean et al. point out, labour force growth was as high in the 1960s in many countries, when unemployment was low, as in the 1970s and 1980s, when unemployment increased. The lack of a clear connection between unemployment and labour supply growth has important policy implications. It casts doubt on the crude idea that higher labour force participation by married women leads to higher unemployment (or, that it leads to "women taking men's jobs"). It also raises questions about the effect of emigration on unemployment and the effects of work sharing and early retirement. In the models of the labour market reviewed in sections 3 and 4, reductions in the labour force lead to increased real wage pressures through the wage bargaining process and lead to lower employment: employment can fall

sufficiently to offset the effect of the lower labour force on unemployment. Their evidence broadly supports this conclusion.

The role of aggregate demand policy in reducing unemployment is an issue on which models, between which it is hard to discriminate using available evidence, can yield very different policy implications. The evidence that contractionary macroeconomic policies in the early 1980s contributed significantly to the increase in unemployment has already been referred to. Whether expansionary policies would be successful, however, depends on how aggregate demand affects the labour market. In some models (Bean et al (1986)) employment is affected by deviations of demand variables, such as government fiscal stance, from their long run levels. This means that expansionary government policy may work in the short run; in the long run the wage and price expectations of workers and firms will adjust if the government tries to maintain demand above its perceived long run level. Other models accord even less influence to aggregate demand, allowing only totally unanticipated changes to have an effect. In discussing arguments about the persistence of high unemployment however, it was observed that high unemployment could create conditions which tended to perpetuate it. If government policy reduces the long run rate of unemployment, the forces which tended to perpetuate high unemployment ought to be weakened and the lower rate become sustainable. The conclusions about the effectiveness of aggregate demand policy thus depend very much on the exact specification of the model which is being applied. It must be emphasised that on the basis of aggregate OECD data it is difficult to discriminate between models with such divergent policy implications.

Although the research which has been surveyed does not produce strong conclusions that, for example, employment protection legislation should be weakened or that the replacement ratio should be lowered, it does suggest that the tax wedge — the sum of direct/indirect and employment taxes — lowers employment. It also suggests that labour market adjustment is slow in many countries, so that it may take a long time fully to understand the effects of policies; it warns against policies like work-sharing on the grounds that the result may be wage responses which could end up increasing unemployment.¹²

The research has also produced specific policy proposals for reducing unemployment. The increasing importance of long term unemployment and its implications have been mentioned. In the U.K., attention has been directed at the problem of long term unemployment, in part because of the consequences for the long term unemployed themselves but in part, too, because of their effect on labour market adjustment. The longer people stay unemployed, the less likely they are to leave unemployment, whether because they become discouraged and stop searching or employers are reluctant to hire them because they interpret the long duration of unemployment as evidence of low productivity or other unsuitability for employment. To reintegrate them back into the labour force it is proposed that a one year job guarantee be offered to the long term unemployed. The argument for this scheme rests on the view that by effectively withdrawing from the labour force, the long term unemployed do not exert downward pressure on real wages; bringing them back into the labour force would reduce wage pressure and lower the long run rate of unemployment. It is thus properly seen as a supply side policy. The same underlying model of

the labour market gives rise to the advocacy of a tax-based incomes policy. It is also designed to work by lowering wage pressure. The idea is that a norm be specified for the growth of average earnings of each firm and that firms pay a tax on earnings in excess of the norm; this should discourage firms from offering higher wages. For administrative reasons it is argued that the policy be applied only to larger firms, which account for the bulk of employment anyway. Tax based income policy can be shown to be equivalent to a combination of wage taxes and worker subsidy.

Advocacy of policies like these, just like criticism of policies like work sharing, is based on the notion that the class of models used to account for the rise in unemployment in the U.K. and elsewhere is a reasonable representation of the actual labour markets in those countries. Policy recommendations are model-dependent; some policies may be consistent with a range of models but others can be quite model-specific. Recent research sharpens awareness of this fact and of its consequences.

6. OTHER TOPICS

This chapter concludes with a brief account of research in two other areas, the structure of wages and earnings and migration. The study of the determinants of earnings and wage rates has much in common with that of labour supply, in that it has benefited from the development of the same micro data sets. The effect on earnings of education and training — the creation of “human capital” — has been investigated in detail and the results confirm a strong positive association between education levels and earnings. Further, in comparisons of the returns to education in developed and less developed countries there appears to be a clear association between the size of the returns and the level of development: the lower is the level of development, the higher are the returns. Returns in advanced countries are about half the returns in less developed countries. The effect of on-the-job training on earnings profiles have also been examined and evidence supporting the hypothesis that on-the-job training is associated with lower initial earnings and higher earnings growth is presented. Among other topics studied have been the affects of inequalities of opportunity and ability. For a comprehensive account of this field, see Willis (1986) or Weiss (1986).

The existence of wage differentials has been of interest to economists since Adam Smith, who introduced the idea of equalising or compensating differentials. By this is meant that “observed wage differentials are required to equalise the total monetary and non-monetary advantages or disadvantages among work activities and among workers themselves” (Rosen (1986), p.641). Jobs vary with respect to many different attributes — working conditions, location, work schedules, the nature of remuneration and risk of unemployment, among others. The attributes influence the supply of labour to different jobs and also influence firms’ demand for workers with different traits. Equilibrium of supply and demand will lead to wage differentials reflecting these job attributes and worker traits. Empirical research has been done on the extent to which observed wage differentials can be explained by these factors, but while progress has been made, and plausible results obtained, the precise measurement of job and worker attributes is difficult without micro data for workers and firms (which obviously

should be matched). One differential which has been studied in detail is that between union and non-union workers. This is another area of research which has been revitalised by the micro data sets available in the U.S. Estimates from these data sets suggest that union wage rates in the U.S. exceed non-union rates by an average of 14 per cent on average over the years 1967-79, but this estimate may be a bit high (see Lewis(1986)).

A different approach to the existence of some wage differentials is to analyse labour market discrimination. A comprehensive and critical account of work in this area is provided by Cain (1986). He discusses the difficulties that arise in producing a precise definition of economic discrimination and presents data from the U.S. on income and wage rates of whites, blacks, Hispanics and on men and women. The observed income and wage differences are not fully accounted for by such factors as education or job attributes, but theories of discrimination so far developed do not adequately explain what is observed, which limits the policy implications which can be drawn from them.

There has been a revival of interest in the idea of segmented or dual labour markets, in part as a response to a perceived failure of other models to explain wages and income differentials across workers and the incidence of unemployment. The basic argument is that the labour market is divided into two parts, the primary labour market which offers good pay and conditions, returns to education and so on, and the secondary market which offers low wages, poor conditions and no opportunities for advancement. In addition, it is very difficult to transfer from the secondary to the primary market because of the existence of non-wage barriers. The failure of the U.S. poverty programme has been blamed on its inability to overcome the dual structure of the labour market.

Segmented labour markets have been connected with the existence of the internal (to the firm) labour market and with the idea of efficiency wages and this relates to the earlier discussion about flexibility. But alternative theoretical explanations of this structure are now being developed. The empirical evidence on the existence of dual labour markets is not yet conclusive. Recent work by Dickens and Lang (1984) provides evidence in favour of the hypothesis; later work suggested wage differentials across industries which could not be accounted for by other factors. Other studies at the individual level for the U.S., however, found little evidence that significant groups of people were trapped in low wage jobs, with the exception of poor blacks. It is evident that much work remains to be done to account for observed wage structures.

Labour migration is a topic of considerable interest. Work has been done on explanations of migration flows and on their consequences. Recent examples of the former are a study of migration within Great Britain by Pissarides and McMaster (1984); they conclude that migration is affected by regional unemployment and wage differentials, but the process of adjustment is very slow. Migration flows within Europe are also the subject of research, two recent examples being Eriksson (1985) on Finland-Sweden migration and Katseli and Glytsos (1985) on Greek migration. These studies are concerned with the influence of wage and labour market conditions on migration flows. A significant part of the work on labour migration is concerned with its effects on the *receiving* countries, rather than on the *sending* countries, the U.S. and

Australia being important examples for the former. An example of research on U.S. immigration is Chiswick (1986), who examines the consequences of the shift of immigration from Europe and Canada to Asia and Latin America and the effect of changing visa qualifications. Research on Australian immigration is surveyed by Withers (1986). A short account of the theoretical and empirical issues arising in modern research on migration is provided by Stark and Bloom (1985).

7. CONCLUSION

This chapter has presented a selective review of recent research on labour markets. It has concentrated on those areas where research has been most extensive: labour supply, employment and unemployment. It has pointed out the large amount of work which has been done, the different approaches which have been used, the degree of progress which has been achieved in the different areas, the general conclusion that much remains to be learned, and the implications for policy of our present state of knowledge.

The organisation of the review has depended on the conceptual framework described in Chapter 1. The value of a properly articulated framework is to be found not only in the specification of the variables which determine labour force participation and hours of work, and the employment decisions of firms, but more critically in understanding the interactions of the decisions of firms and workers. A conspicuous example of the latter was provided by the lack of a clear, observed connection between changes in labour supply and changes in unemployment in international data. A resolution of this apparent puzzle was found in the wage bargaining process, itself based upon the underlying models of firm and worker behaviour.

While the major areas of research have been reviewed, significant areas have been omitted. They include the detailed study of employment contracts, both implicit and explicit, the formal analysis of trade union behaviour and the economics of strikes.¹³ Only occasional reference has been made to empirical evidence on the Irish labour market. This is the subject of Chapter 3 and, together with the results of the survey of the international literature, forms the basis of the research agenda proposed in Chapter 4.

Chapter 3

A Selective Survey of the Irish Literature on Labour Market Research.

1. INTRODUCTION

The emphases in recent research on the Irish labour market differ from those described in Chapter 2. Employment has been studied most intensively, especially at the aggregate level, and both dynamic and long run models have been estimated. Work has also been done on unemployment but it has not been developed as much as in, for example, the U.K. While changes in labour supply are obviously an important part of recent economic experience, there is no Irish counterpart to the enormous volume of work undertaken on that topic in the U.S. and, to a lesser extent, the United Kingdom. Irish research on labour supply is limited, the exception being the attention paid to the closely related area of migration. Population and labour force projections are regularly undertaken, but there are few examples of systematic modelling of labour supply.

In this chapter, some of the recent research on Irish labour market issues is reviewed. The structure of the review follows that of Chapter 2; attention is restricted largely to work published in the last decade which is relevant to the material discussed there, with only occasional reference to earlier studies. The next section deals with labour supply, section 3 with employment, section 4 with unemployment and the final section with other topics.

2. LABOUR SUPPLY

The study of labour supply in Ireland contrasts with that in the U.S., the U.K. and elsewhere in a number of respects. One, already noted, is quantity; the amount of work done is small. A second is the type of data used. Micro data sets comparable to those in the U.S. and U.K. do not exist, so that in most cases aggregate time-series data have been used. The distinction between male and female labour supply, so prominent in international work, is not usually drawn. Exceptions are to be found in pioneering work by Walsh (1970/71) and Walsh and Whelan (1973/74), but the observations are appropriate to the bulk of work done since then. The most recent study of labour supply in Ireland is by Murphy and Thom (1987). They estimate a model of labour supply and commodity demand, using annual data for the period 1951 to 1983. They find that labour supply responds positively to the wage rate — a one per cent increase in wages is associated with a 0.2 per cent increase in labour supply, where labour supply refers to numbers employed. A labour supply equation was also estimated by Geary and Murphy (1986) using annual data for 1953-82, where labour supply is modelled as depending on current and expected net wage rates, the replacement ratio and other variables. The measured responsiveness of supply to wage

changes was similar to that obtained by Murphy and Timmins, but the estimates were not very precise. Estimates of a labour force participation equation in the macroeconomic model of Bradley, Fanning, Prendergast and Wynn (1985) showed no response of participation to wage variables.

Irish migration has been studied at length, but largely in terms of its causes. Attempts by Geary and Murphy (1986) to identify some of its consequences, by including migration variables in the labour supply equation, had no success. Recent research on migration includes Bradley et al (1985), Geary and Murphy (1986) and Geary and O Gráda (1986); a review of earlier work is provided by Keenan (1981). Bradley et al. specify migration to be a function of expected income differences between Ireland and the U.K., Geary and Murphy adopt the same approach but include the effects of the tax and social welfare systems in the two countries on expected incomes. The empirical analysis is further developed by Geary and O Gráda, who separate the effects of differences in the tax and welfare systems from wage differences. The results obtained support the role of expected income differences as determinants of migration between Ireland and the U.K. and appear to provide strong support for the influence of tax and social welfare systems. The data period of the study is 1953-1982, which predates the large increase in emigration of recent years. Bradley et al. use data for the period 1967-1980.

3. EMPLOYMENT

Employment, which is equated with the demand for labour, has been an active area of economic research in Ireland. Most of the recent work considers the demand for labour in the long run; examples are Bradley and Fitzgerald (1988), Bradley et al (1985) and Geary and McDonnell (1980). Other studies using a dynamic specification include Geary and Murphy (1986) and the cross-country studies by Bean, Layard and Nickell (1986) and Newell and Symons (1985). Their data periods and approaches differ, but all allow the calculation of the long run response of labour demand to changes in wages. They yield reasonably consistent results. The smallest response is found by Geary and McDonnell, which, since their model is conditional on output, is to be expected. The other studies suggest that a one per cent rise in labour costs is associated with a 0.8 to 1.0 per cent fall in employment, which is close to the OECD average reported in Chapter 2. It should be noted that Geary and Murphy (1986) included demand variables of the type used by Layard and Nickell (1986) but found no significant effects. The corresponding figure obtained by Geary and McDonnell was in the range 0.6 to 0.7 per cent, somewhat larger than the responses found in other countries using comparable models.

The effect of government policies on the cost of capital has been investigated by Ruane and John (1983); this is relevant to the long run demand for labour in Ireland. They show that the increase in the cost of labour relative to capital which took place in the last thirty years has been considerably accentuated by government policy, through the combination of employer PRSI, and the favoured tax treatment of capital spending by firms. This conclusion is reached without taking account of capital grants.

These studies refer to aggregate employment, the level of aggregation ranging

from the manufacturing sector to the whole economy. The demand for labour at the industry level was the subject of a paper by Boyle and Sloane (1982), which used data for forty industries over the period 1953 to 1973. They estimated the response of employment and capital to input price changes; furthermore they distinguished between salaried and non-salaried workers. The results for some industries are hard to interpret but the others gave no conclusive evidence on whether the demand for non-salaried labour was more wage responsive than salaried labour. The size of the individual industry responses to wage changes was somewhat lower than the response in the aggregate studies.

4. UNEMPLOYMENT

Research on Irish unemployment has not been fully integrated into a framework which allows detailed comparisons of the determinants of Irish unemployment with those of other countries, most notably the U.K. Work done in the past decade has taken a number of forms. Some studies have attempted to estimate the determinants of unemployment, using an unemployment equation. Examples are Ó'Casea (1983) and Honohan (1984). Ó'Casea specified an equation in which unemployment depended on employer's and employee's real wages, the replacement ratio, a migration variable and output. He reported that the replacement ratio and the employer's real wage had a strong upward effect on unemployment. Honohan focused on the importance of migration as a determinant of unemployment in the long run. He argued that there is a long run equilibrium differential between Irish and U.K. unemployment rates and changes in that differential are transitory. Honohan identifies the average differential as the equilibrium one and estimates the dynamic properties of the actual differential. He then investigates whether variables like the replacement ratio can add to his account of the movement of the unemployment differential. The evidence suggests that it can, but the results are much weaker than Ó'Casea's. A recent study in the same tradition is by Lee (1987) who investigates the persistence (or hysteresis) of Irish unemployment, mainly in terms of its own dynamics.

A number of studies exist on specific aspects of Irish unemployment. Among them are a study of the duration of unemployment by O'Mahony (1983) and the effect of unemployment insurance on unemployment duration by Hughes and Walsh (1983). The relationship between youth and adult unemployment was investigated by Walsh (1985), who showed that the Irish experience differed from that of other European countries in that the youth unemployment rate was comparable to that of older workers, and not much higher.

Walsh (1987) surveys recent work on Irish unemployment and investigates the relationship between unemployment and a list of possible determinants of its level. The investigation is done on a case by case basis, however, rather than within a more fully specified framework so that its conclusions should be regarded as descriptive and suggestive rather than conclusive. The paper includes a discussion of labour market flexibility, a topic which is also considered in the OECD Survey of Ireland 1987/88. This document contains a useful description of the provisions of the tax and social welfare system, a list of social welfare schemes introduced since 1967 and their cost to the exchequer, and a summary of legislation on minimum wages, employment protection and trade

unions. Detailed evidence on their labour market consequences is not available. However, a survey conducted on behalf of the Department of Labour (1986) suggested that employers regarded labour legislation as being of limited significance.

A number of programmes targeted at the unemployed have been established in Ireland in recent years, under the aegis of bodies like the National Manpower Service and the Youth Employment Agency (both now part of FAS). Evaluations of some of these programmes are being conducted, which should provide useful information about the unemployed and the problems of lowering unemployment. A recent example is the evaluation of the Enterprise Allowance Scheme by Breen and Halpin (1987), which is reasonably positive towards it. Whether such schemes can be operated successfully has a significant bearing on the formulation of labour market policies.

Murphy (1987) investigates the implications of the estimated supply and demand responses reported in sections 2 and 3 above for the effects of changes in the tax wedge on employment and unemployment. He finds that a one per cent increase in the tax wedge is associated with a 0.14 per cent rise in the unemployment rate. The cross-country study by Bean, Layard and Nickell (1986) presents a breakdown of the causes of the increase in Irish unemployment on the basis of a Layard-Nickell model. They attribute about two-thirds of the increase between 1955-66 and 1980-83 to the tax wedge and the rest to demand factors. In their model, the tax wedge is one of the determinants of the wage so that, as Newell and Symons (1987b) note, part of what is attributed to taxes comes through wage pressure. The ESRI study, edited by Conniffe and Kennedy (1984) is an example of one which eschews this type of framework. It interprets the level of unemployment as being essentially due to low economic growth and accords a central policy role to direct public sector job creation.

5. OTHER TOPICS

Other topics which have been studied include the incidence of payroll taxes. Hughes (1985) documents the growth of the social insurance system and estimates the incidence of employer's PRSI with a view to evaluating the effects on employment of its reduction. He concludes that the effect would be small but his analysis was criticised by Fagan and Murphy (1986); see also Hughes' reply (1986). Wage determination was the subject of an interesting study by Reilly (1987). Using micro data from the EEC commissioned ESRI executed survey entitled "Youth Employment and Transition from Education to Working Life", carried out in 1982, he estimates earnings functions for single males and single females. The explanatory variables include educational levels, other qualifications, job characteristics, industries and regions and he tests for the presence of sex-discrimination. His results show higher returns to education for males than females and the same holds for on-the-job training, although the returns to the latter fall faster for males than females. The evidence does not support the hypothesis of discrimination. This study is of the same type as some of the studies referred to in section 6 of Chapter 2. The only other Irish study of the determinants of earnings is by Walsh and Whelan (1976).

6. CONCLUSION

This concludes the selective survey of recent research on Irish labour market topics; references to other work will be found in the bibliographies of the papers cited there. It is clear that in some important areas there are fewer points of contact between the research on the Irish labour market and international research than is desirable. If policy makers in Ireland are to obtain full benefit from the work which has been done elsewhere, this situation should be remedied as far as possible. An appraisal of the present state of knowledge of the functioning of the Irish labour market is implicit in the proposals for future research, which form the content of the next chapter.

Chapter 4

An Agenda for Research on the Irish Labour Market.

1. INTRODUCTION

A comparison of the contents of Chapters 2 and 3 establishes the dearth of research on the Irish labour market. A number of points stand out clearly. The most important is that there are significant gaps in our knowledge about unemployment, employment and labour supply, relative to the state of knowledge in countries like the U.K. or the U.S. However, it has been seen that even in such countries, where most research has been done, many issues remain unresolved. It has also been seen that policy prescriptions can depend heavily on the properties of the model of the economy or the labour market which is judged appropriate by the policy maker. Discriminating between models on the basis of available evidence can be difficult. In these circumstances, policy making is particularly demanding.

In drawing up research priorities, another general point should be made. This is that there are no grounds for presuming that research will yield quick and decisive policy conclusions. The desire for them is natural but must be tempered by realities. If quick and decisive answers are insisted upon, they will probably be delivered but the odds on their producing good policies are poor.

The first priority is to promote research on unemployment. A modest starting point would be to bring our knowledge of Irish unemployment closer to the level that exists in the U.K. and Europe. The determinants of employment also need further study, but at a much more disaggregated level than most of the existing research. Labour supply, other than its migration dimension, has been the subject of little recent research; there are both opportunities and strong reasons for undertaking research now. These research areas are related; findings in one area should be relevant to the others. Research on wage determination is contained in the first proposal; should resources be available, more work in that area would be worthwhile.

2. RESEARCH PRIORITIES

The following list of priority research projects is proposed:

(1) **Unemployment**

The causes of the increase in and persistence of Irish unemployment.

(2) **Employment**

The determinants of employment at the industry and the enterprise level.

(3) Labour Supply

- (a) The labour supply of married women.
- (b) The implications of emigration for the Irish labour market.

Each is now considered in detail.

(1) Unemployment

The results of attempts to account for the level of unemployment in the UK and other countries were described in Chapter 2. As noted there, increases in unemployment in different time periods were ascribed to different factors, such as real wage pressure, taxes and output demand; the persistence of unemployment in the 1980s in Europe was attributed to slow adjustment processes which were linked to various aspects of labour market flexibility. It was concluded that the growth of labour supply was not responsible for the increase in unemployment, implying that policies directed at reducing labour supply by, for example, reducing labour force participation of women, reducing hours worked through work-sharing or promoting early retirement might be counterproductive. It is evident that a broad range of policy issues is raised by these conclusions.

In the light of the severity of the problem of unemployment in Ireland, the amount of research undertaken in the last decade is limited. Policies designed to deal with unemployment are being formulated in the absence of a systematic modelling of the labour market. The importance of trying to remedy this situation is overwhelming. Given resource constraints and the desirability of making progress, a useful initial step would be the development and estimation of labour market models on the lines of those applied to the UK and other OECD countries' labour markets, appropriately adjusted to meet the particular characteristics of the Irish labour market.

This project should be undertaken as soon as possible. It would enable important questions to be addressed. For example, do such models provide an adequate account of Irish labour market experience? Do Irish data provide a basis for discriminating between them? Does the breakdown of the sources of the increase in Irish unemployment arising from these models differ from that in other countries? Does the finding that labour supply changes have little effect on unemployment hold for Ireland? The answers to these questions have significant implications for policy. Another important issue is the growth of long-term unemployment, which has been emphasised in recent international research, especially in the U.K. Long-term unemployment is a serious problem in Ireland, too. Its effects should be examined to see whether they match those in the U.K.; if they do the viability of policy initiatives to lower the rate of long term unemployment should be investigated.

It should be clear from this discussion that by initiating the proposed research a valuable step will be taken towards providing a framework within which to make policy proposals and analyse their consequences. If the original framework proves adequate, progress will be faster; if it does not at least effort will then be properly directed, at producing a framework which is adequate. A proper framework is indispensable to good policy formulation. The viability of the research proposal depends on data availability. Enough data are available to

enable research to get under way, even if some proxy variables have to be used. The results have significant implications for subsequent research, which gives the proposal a certain urgency.

This proposal involves the use of existing time-series data, mainly at the aggregate level. Micro-level data sources may provide better information on some questions. The principal data sources of this type in Ireland are the Labour Force Surveys, the Household Budget Survey, now in progress, and the EEC commissioned, ESRI conducted "Survey of Life-Style and Usage of State Sources". A preliminary investigation of the extent to which these sources could be used to do research on unemployment would cost little and provide a useful foundation for later work.

(2) Employment

The determinants of employment have been studied at the aggregate level, with results comparable to those obtained in other countries. However, the recent research has been confined to aggregate data, which rules out many interesting questions. Issues such as the relationship between the size of firm and employment growth, job quality and the "births" and "deaths" of enterprises have been investigated in other countries using data at the level of the enterprise and establishments; for an interesting summary, see OECD Employment Outlook (1985). The role of financial variables as determinants of employment decisions was discussed in Chapter 2; data at the level of the individual enterprise is essential to establishing this role. It was also observed that U.K. research using such data revealed a considerable difference between the size of responses obtained from micro level data and aggregate data.

Given the importance to an understanding of unemployment of an understanding of the determinants of hiring decisions, existing data sources at the level of the individual enterprise or establishment should be exploited. The annual Census of Industrial Establishments and Census of Industrial Enterprises provide a data set which has not been used in this connection. There are problems of confidentiality surrounding access to these data and to firm level data collected by the IDA. However, even if some aggregation of data was necessary before access was made available, the potential of these data sources for research into employment would seem to be substantial. As a first step, the feasibility of using them, as well as the type of questions which the data could be used to answer, should be established. This exploratory study would cost little, could be done in a short time and would resolve this issue of whether such research is feasible. If it is, it should be undertaken.

Time series data at the level of the individual *industry* are available, and have not been subjected to detailed analysis. The determinants of employment at the industry level should be investigated, to establish whether the results discussed earlier are influenced by aggregation. As well as allowing measurement of responses to real wage and other changes, as in aggregate studies, this would also provide evidence on *interindustry* responses i.e. on the issue of flexibility at the industry level. The findings of research at this level would provide input to the investigation of the determinants of unemployment, which is the overriding priority. The feasibility of this type of research is known. In some cases resort to proxy variables would be necessary but this should not prevent worthwhile progress. The costs are not great, because the data are published.

(3) Labour Supply

The fact that the labour force participation of married women in Ireland has been increasing, but that it is still appreciably lower than in many OECD countries, was noted in Chapter 1. In Ireland, unlike many other countries, detailed study of the labour supply decisions of married women have not been undertaken since the early 1970s. The implications for the Irish labour force of the growth of the participation rate of married women to European levels are significant. If it occurs, not only will the size of the labour force be affected but also, if experience elsewhere is a guide, so will wage rates and the type of employment relationships in the economy. The increase in part-time employment in the U.K. was mentioned in Chapter 2 in this connection. The more general social implications of this change are clearly significant. Attention was also drawn in Chapter 2 to the implications for the incentive effects of tax reform of differences in the labour supply responses of men and women.

In view of these points, research into the labour force participation and hours of work of women, especially married women, in Ireland is a priority.

This is so whether or not there is a weak (or no clear) connection between increases in the labour force and unemployment. The feasibility of research depends on the use to which the Labour Force Surveys and other Surveys referred to earlier can be put. The study of participation decisions requires micro level data, as the literature reviewed in Chapter 2 makes clear; the amount that can be established from published time series data is strictly limited. A preliminary assessment, along the lines suggested for establishing what can be done with firm-level data, should be initiated. This would cost little and would not take much time. If the results are satisfactory, research should be undertaken.

Emigration has been studied, but the experience of the last five years makes this, again, a priority area. Most of the Irish research on emigration has been on its causes. This is still an important topic, in the light of findings that social welfare and tax systems of the U.K. and Ireland affected migration flows. Recent changes in the U.K. tax system, and the overhaul of the social welfare system could influence the size and destination of Irish emigration, with consequences for the adequacy of the education system as well as the domestic labour market. The effects on the Irish labour market of emigration have not received the same attention as the causes; this is also an important issue. The feasibility of doing research on migration is hindered by the quality of data. Estimates of annual net flows are available, but reliable data on destination is not. Whether better quality data on emigrants and immigrants can be obtained from the annual Labour Force Surveys is worth establishing. In fact, given the potential data problems and resource constraints, the most that can be expected in the short run is research based on existing data with all their shortcomings, and an investigation of the costs involved in combining existing data with data especially collected for the purpose of studying emigration.

3. CONCLUSION

This research agenda is aimed at major topics which are at present inadequately researched and which have an obvious, central policy relevance. It is by no means an exhaustive agenda but it consists of high priority topics. All of them are

actually or potentially related to unemployment; unemployment is an obvious manifestation of the problems of the working of the labour market. Wage determination has not been listed as a separate topic for research. In fact, it is part of the research proposal on unemployment. There are aspects of it which could usefully be studied in more detail, but the same is true of other issues. What can be concluded is that if the research proposals outlined here are undertaken, there is a prospect of achieving better understanding of the Irish labour market with the expenditure of modest resources.

NOTES

Chapter 1

1. The data in this chapter are taken from Blackwell (1986), the Labour Force Surveys, OECD Employment Outlook (1987) and the Census of Population 1971, 1979.
2. See NESC Report No. 83.
3. See Ehrenberg and Smith (1982), pp. 1-2.
4. For example, see Conniffe and Kennedy (1984).

Chapter 2

1. The recently published Handbook of Labour Economics (1986) is an indispensable guide to research on labour economics.
2. Three major surveys of the literature on labour supply have appeared since 1983. They are by Killingsworth (1983), Killingsworth and Heckman (1986) and Pencavel (1986). The latter two appear in the Handbook of Labour Economics. This section owes much to them, including many of the data.
3. The exception is Layard and Nickell (1986). Bean et al, use value added prices but are able to compute an import price effect. Materials and energy prices are usually proxied by import prices, where a variable to represent them is explicitly included.
4. For further details on some of these facts see Johnson and Layard (1986).
5. The term "nonaccelerating inflation rate of unemployment", abbreviated to NAIRU, is also used to describe this rate.
6. The estimate for the U.K. in Table 7 is well below that reported by Layard and Nickell (1986).
7. The discussion of corporatist wage setting processes was initiated by Bruno and Sachs (1985). See also Bean et al. (1986).
8. The point is emphasised by Metcalf (1987).
9. Whether the fall in U.K. unemployment in 1987 and 1988 is partly due to this fact remains to be established.
10. Emerson (1988) provides a useful documentation of cross-country differences in employment laws and regulations.
11. An analysis of labour market flexibility from a Japanese perspective is presented by Tachibanaki (1987). He argues that the rate of unemployment is a bad indication of Japanese labour market conditions because of the existence of discouraged workers and because it doesn't respond to output fluctuations. He accepts that real wages are flexible in Japan but questions whether this affects employment very much. Flexibility of working hours is regarded as important. In general, his conclusion is that while flexibility has its benefits, it is not the main reason for Japanese economic performance. Further, it has costs, too. The costs of flexibility are also highlighted in the ILO (1986) study of the U.K. labour markets where the connection between flexibility and insecurity is emphasised.
12. Dreze (1987) argues that early retirement with mandatory replacement is the most promising approach to work sharing in the short run, on grounds of microeconomic efficiency. The efficiency gain arises through the replacement of older by younger workers, who are likely to be more productive and whose unemployment generates higher social costs than early retirement. His analysis concentrates on work sharing as a policy to alleviate the effects of reassign and does not deal with the kind of questions raised above.

13. Accounts of work in these areas appear in Ashenfelter and Layard (1986); see Parsons (1986), Kennan (1986) and Lewis (1986) See also Freeman and Medoff (1984) and Oswald (1986).

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