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Unemployment Compensation and Labor Market Transitions: A Critical Review

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Introduction

THE MARKED RISE in unemployment in most OECD countries during the 1970s and 1980s has led academic economists and policy makers to give unemployment compensation an attention it had not previously received in the postwar period. This attention has been largely critical. Typically economists have seen unemployment compensation as having a negative effect on the labor market, with high benefits causing the unemployed to be less willing to accept jobs and inducing those in employment to quit to become unemployed. The rise in unemployment in Western Europe since the 1970s, and its persistence in a number of countries, is attributed, at least in part, to more generous levels of benefit payments.

The negative view of unemployment compensation has tended to lead to a polarization of the policy choices, with ade-

quacy of benefit levels being traded off against their disincentive effect in increasing unemployment at the expense of employment. The choice is framed in this way to Eastern European countries making the transition to a flexible labor market: an adequate level of income support can only be achieved at a cost in terms of incentives. But this is a dangerous oversimplification. It assumes that policy is judged solely in terms of reducing unemployment and increasing employment. This takes a too limited view of the labor market.

A central theme of the paper is that it is necessary to distinguish several different labor market states, and not to consider only employment and unemployment. People may leave compensated unemployment but not take employment. They may leave the labor force or undertake full-time training or education. They may be in uncompensated unemployment. These different labor market states may have quite different implications for the development of the economy. Moreover, within any defined labor market state there may be considerable heterogeneity. A person in receipt of unemployment benefit may be seeking work or may not be engaged in job search, either because he has become discouraged or because he already has a prospective job. A person not in the labor force may be sick or disabled, retired, caring for dependants, or undergoing training. Employment cannot be regarded as homogeneous. A temporary job in the black economy is quite different from a career position with a large enterprise. We begin therefore by providing in Section 1 a framework that allows for a richer treatment of the labor market.

The second misleading feature of the tradeoff view is that it mistakenly assumes that the impact of unemployment compensation can be summarized in terms of the level of benefit. In reality, we have to take account of a wide range of institutional features of unemployment compensation that are relevant to its adequacy in providing income support and to its effect on labor market behavior. These include the conditions that determine whether a person is unemployed and making efforts in good faith to find a job, the possibility of disqualification from benefit, the contribution conditions, the structure of benefit payments over time, the relationship between benefit and the income of other family members, and the financing of benefit schemes. The importance of the institutional features of unemployment compensation is the second principal theme of this paper. In particular, we must distinguish between unemployment *insurance* and unemployment *assistance*. Section 2 considers the operation of real world benefit schemes in the OECD area, contrasting these with the oversimplified view of unemployment compensation that is held by many economic analysts.

The institutional structure of unemployment benefit has major implications for both theoretical and empirical analysis of the effect of unemployment compensation on employment, unemployment, and wages. Section 3 reviews the theoretical literature on unemployment compensation and its effect on labor market transitions, either directly or indirectly via changes in wages. We are concerned with the fact that—with some notable exceptions—labor market economists have paid little attention to how unemployment benefits actually work. When account is taken of such features as the qualifying conditions for unemployment insurance, for example, it becomes apparent that this benefit may have positive, as well as negative, effects on the incentive to work.

In Section 4 we consider the empirical

evidence for OECD countries concerning the effect of unemployment compensation on labor market transitions. Our focus is on the need to distinguish between different labor market states and on the treatment of the institutional features of unemployment benefit. Studies modeling the impact of benefits on the outflow from unemployment may not tell the whole story, since the effect may be on flows into inactivity or uncompensated unemployment rather than into employment. The influence of unemployment compensation may depend not just on benefit levels but also on their duration and administration and on the family means-test typically involved in unemployment assistance. In interpreting the evidence, it is important to recognize that the unemployment compensation schemes actually in force in OECD countries may differ quite considerably, in particular with respect to the distinction between insurance and assistance.

Our review of research on unemployment compensation is of necessity selective. First, a full discussion of the impact of unemployment benefits would need to consider their relationship to aspects of policy that we do not cover here, such as active measures to encourage employment or the impact of personal income taxation on labor supply. Secondly, we do not seek to give an exhaustive account of the impact of unemployment compensation on the economy. Our emphasis is on the direct impact on labor market transitions. While we do consider the impact of unemployment compensation on wage setting in describing theoretical models, this does not feature in our account of the empirical evidence. We give no consideration to the impact of unemployment compensation on aggregate demand in its role as an automatic stabilizer.

Finally, in referring to theoretical and empirical studies we have made no attempt to be comprehensive; we refer only to contributions that illustrate the central issues. Our selection also reflects the countries with which we are most familiar, and it cannot be stressed too strongly that findings for one country do not necessarily carry over to another with a different history and institutions. This applies especially to the United States, which has the largest stock of empirical evidence, but whose labor market is different in crucial respects from that found in European countries, which differ in turn from Japan and other OECD countries. Within countries, too, labor market and other conditions change over time, and a more extended review of the evidence would need to account for the differences between, say, the 1970s and the 1980s.

I. *Labor Market Transitions: A Framework for Analysis*

A. *In and Out of the Labor Force*

The effect of unemployment compensation is usually seen in terms of the disincentive it provides to leave unemployment for employment, encouraging workers to search longer or less intensively for new employment. Or it provides an encouragement to make the reverse transition by quitting employment to enter unemployment. These are important transitions but they represent only a partial picture. The relaxation of eligibility criteria for unemployment benefits, for example, may lead persons not previously participating to join the labor force, while disqualification or exhaustion of benefit entitlement may lead to withdrawal from the labor force rather than employment. We need therefore to consider flows between inactivity and unemployment. A prerequisite for our analysis is a model of the labor market that goes beyond a simple employment/unemployment dichotomy.

The existence of sizeable flows to and from economic inactivity is a feature that can be seen in various OECD countries.[1] Table 1 shows for eight countries the labor market status as of one week in 1985 of persons unemployed 12 months previously. In seven of the eight countries, more than one fifth of those not unemployed a year later were out of the labor force. (The exception is Italy.) In Ireland and the U.K. the figure was over two fifths. The table does not tell us the state to which people exited from unemployment; moreover, some of those shown as unemployed in 1985 could have left unemployment but reentered unemployment during the year. Nevertheless, the table indicates that large numbers of transitions to inactivity occur among people recently unemployed.

TABLE 1

LABOR FORCE STATUS IN 1985 OF THOSE UNEMPLOYED 12 MONTHS EARLIER

	Unemployment	Employment	Not in Labour Force
Belgium	69	22	9
Denmark	37	49	14
France	54	29	17
Ireland	69	18	13
Italy (1983)	61	32	7
Netherlands	62	24	14
U.K.	51	29	20
U.S.	26	49	25

Source: All except the U.S. from OECD 1987, Table 1.12, based on recall information in the Labor Force Surveys; the U.S. figure from OECD, 1987, Table 6.9, based on the Current Population Survey re-interviews.

The figures in Table 1 refer to the subsequent employment status of "length-biased" samples provided by the unemployment stock.[2] To the extent that exit to inactivity is more common from long spells, the figures in the table may give an exaggerated picture of the flows into inactivity. We would also expect the pictures for men and women to be rather different. Having said this, evidence from several countries indicates that flows into inactivity are also a prominent feature of data referring to men only and of data referring to a random sample of outflows. For example, little more than one half of a sample of men registered as unemployed in the U.K. in 1976 who had left the register six months later had entered employment (U.K. Department of Employment, 1977, p. 565).[3]

The figures in Table 1 relate to the transitions *to* inactivity, but the transitions *out* of inactivity are also important. Again we see substantial numbers of persons entering unemployment not from

[1] The importance of flows out of the labor force has long been recognized in the U.S. See for example Jacob Mincer (1966) and Stephen Marston (1976). Kim Clark and Larry Summers, using data from the U.S. Current Population Survey (CPS) for 1974, argue that almost one half of all completed spells of unemployment ended in withdrawal from the labor force and not in employment (1979, pp. 15 and 25). As they recognize, their results depend on the definitions of unemployment and not-in-the-labor-force, a subject discussed below. On the problems with measuring flows using the CPS data in the U.S., see John Abowd and Arnold Zellner (1985). Movement between different labor market states in Great Britain is examined by Richard Disney and John Creedy (1981).

[2] Spells of unemployment that are completed quickly have a lower probability of still being in existence when the stock of the currently unemployed is observed. Longer spells have a correspondingly higher probability, a phenomenon known as "length-bias" (Nicholas Kiefer 1988).

[3] Some 44 percent of completed spells of unemployment recorded in Canadian data for 1980 ended in withdrawal from the labor force and even for males aged 25–44 the figure was 29 percent (Abrar Hasan and Patrice de Broucker 1984, p. 47). Only two-thirds of outflows from West German unemployment in September 1977 for males aged 25 and over was to work—including job creation schemes (Ulrich Cramer and Heinz Werner 1984, Table 5c). Comparative figures for the outflow from unemployment in West Germany and Denmark in 1983 show that 24 percent of men in Germany and 14 percent in Denmark became economically inactive, and that for women the figures were 30 percent and 23 percent (Christian Toft 1990, Table 6).

employment, but from inactivity. In a British study of a sample of family heads aged 20–59 with a registered unemployment spell of at least three months in 1983, for 30 percent the most recent classifiable labor force state before entering registered unemployment was not employment (Patrick Heady and Malcolm Smyth 1989). Inactivity is also a significant source of transitions directly into employment. Figures for eight European Community countries show that, of those in a permanent job in 1985 who had not been in employment a year earlier, more than half had been "not in the labor force" rather than "unemployed" (OECD 1987, Table 1.11, based on recall information in the Labour Force Surveys).

Most models of the labor market assume that spells of unemployment both start with entry from and end in exit to employment. It is clear that many spells do not fall into this category. Restricting attention to spells of registered unemployment where both state of exit and entry are known, West German data show that less than half of spells ending in September 1977 experienced by persons aged over 24 were of this type (Cramer and Werner 1984).

B. *Definition of Unemployment and "Not-in-the-Labor Force"*

In terms of a transition matrix between the three states—employment, unemployment, and not-in-the-labor-force—the evidence suggests that there may be important flows between each of the cells. Their significance does however depend on the definition of the different states. What exactly is meant by "unemployment" and by "not-in-the-labor-force," and how far are they homogeneous states? (The reader may have detected a variety in the sources we have referenced.)

In the case of *unemployment*, we may distinguish between definitions based on administrative considerations, such as the claiming or receipt of unemployment benefit and/or registration at a state employment agency, and definitions based on observed or self-reported labor market behavior, such as the level of job search activity. In the U.K., the official measure of unemployment adopts the former basis, being based on the number of benefit claimants, whereas the 1982 ILO Guidelines for unemployment statistics, now used by the OECD, relate to the latter basis, the unemployed being defined as those without work who are actively seeking a job. The implications of such a distinction are illustrated by the fact that in the U.K. in Spring 1987, although the total number of unemployed on the ILO/OECD definition was quite similar to the official total, nearly 30 percent of those classified as unemployed according to the official benefit claimant definition were not so classified according to the ILO/OECD definition, and vice versa (U.K. Department of Employment 1988). On the one hand, there are those actively seeking work who are not eligible for or not claiming benefit; on the other hand, there are those in receipt of benefit who are not regarded as actively seeking work. And there are "discouraged workers," not currently searching, who are missing from both sets of figures if they do not claim benefit, but who classify themselves as unemployed.

Transitions out of unemployment defined on one basis may not occur on the other. A tightening of the eligibility conditions for benefit may reduce the number of recipients, causing people to make the transition from unemployment to inactivity. But on the basis of job search activity, there may be no change. In this instance, government policy may result in flows between two states on an official definition without having any genuine

impact on individual behavior.[4] This may be one reason for the flows between unemployment and "not-in-the-labor-force." A prolonged recession in the economy may lead some persons registered for unemployment compensation to stop searching for a job. There is then no change in the claimant-based definition, but a fall in unemployment measured according to active job search.[5]

Whichever definition of unemployment is adopted, there will be considerable heterogeneity within the group of people so defined. If we take those in receipt of unemployment compensation, then there will be differences in their extent of job search. As noted, there may be discouraged workers, who have given up active search. There may be those who have already secured a job in the future and are waiting to take it up. There are those working short-time, say 3 out of 5 days a week, and receiving benefit for the remaining days. Or a person may be on temporary layoff unemployment. The distinction between exit to a new job and recall to the previous employer is an important one for both demand and supply sides of the labor market. Employers may, via layoffs followed by recalls, use the unemployment benefit system as a way of seeing them through temporary falls in demand. An unemployed worker who expects to be recalled may have little incentive to search for another job and will thus react differently to changes in unemployment benefits.

[4] Christopher Flinn and James Heckman (1983) investigated whether the two states of "not in the labor force" and "unemployment" were behaviorally distinct, the test being whether the exit probabilities to employment from the two states were determined in different ways. They concluded that this was the case, although the small size and special nature of their sample should be noted.

[5] Claude Thelot (1987) argues that, in the case of France, growth in the number of discouraged workers is one explanation for the divergent movement in the official and ILO unemployment series.

Temporary layoff unemployment is a striking feature of the U.S. labor market, where it has been argued that it accounts for more than half of all unemployment (Martin Feldstein 1976). In Canada, half of all recipients of unemployment insurance in 1984 returned to their pre-unemployment employer and about a quarter of all weeks of unemployment (including those not covered by insurance) were spent in spells starting with a layoff and ending with recall (Matthew Robertson 1989). Layoff unemployment is significant in certain European countries. It has been estimated in Denmark that at least 40 percent of unemployment spells during 1979–84 were due to temporary layoffs and that these spells accounted for at least 16 percent of all unemployment in that period (Peter Jensen and Niels Westergard-Nielsen 1989). Italy is another country where layoff unemployment is significant (Leonardo Felli and Andrea Ichino 1988). However, in general, this form of unemployment is much less common in Europe and other OECD countries than in the U.S. (Felix Fitzroy and Robert Hart 1985). Even in the U.S. a significant minority of those on temporary layoff are not in fact rehired by their previous employer, underlining the importance of distinguishing between recall expectations and actual outcomes (Lawrence Katz and Bruce Meyer 1988).

Just as the unemployed are a heterogeneous group, so too are those likely to be covered by any definition of the category *not-in-the-labor-force*. This group may include those who are sick or disabled, those caring for children and other dependants, those engaged in other unpaid work, those who are retired, those on military service, and those in education and training. The last of these is particularly important from the point of view of labor market policy. The special employment measures which have accompanied the rises in unemployment in the

1970s and 1980s have certainly increased the flows into, and overall importance of, government sponsored training as a labor market state. A dramatic example is provided by the youth labor market in the U.K. In 1979, 11 percent of 16 year old school-leavers were on the government's Youth Opportunities Programme; in January 1982 this figure was 26 percent; and by January 1987 exactly half of all 16 year old leavers were participating in its successor, the Youth Training Scheme (Central Statistical Office 1982, 1985).

C. *Heterogeneity of Employment*

Work too cannot be treated as a homogeneous state. The unemployed person who returns to work may enter employment or self-employment, the latter having different implications, not least for his future entitlement to unemployment compensation (the self-employed are usually not covered). Employment may be full time or part time. In particular, jobs may differ in characteristics relevant to labor market transitions. We should like to distinguish here between what we call "regular" and "marginal" jobs. Regular jobs are full time, have the expectation of continued employment, are covered by statutory employment protection, and are part of the legal economy. They may offer some prospect of promotion and may involve a substantial element of general or specific training. Marginal jobs lack one or more of these attributes. They may be temporary or casual; they may be dead-end jobs; they may be part of the black economy; they may be homeworkers. In defining "precarious" jobs, a concept similar to that of marginal jobs, Gerry Rodgers has emphasized that there are several dimensions, including the uncertainty of continuing work and the lack of control over work, but gives crucial importance to worker protection:

> to what extent are workers protected, either by law, or through collective organization, or through customary practice—protected against, say, discrimination, unfair dismissal or unacceptable working practices, but also in the sense of social protection, notably access to social security benefits. (1989, p. 3)

The distinction between regular and marginal jobs is similar to that between the primary and secondary sectors in a dual labor market (Peter Doeringer and Michael Piore 1971). Jobs in the primary sector are characterized by employment stability and promotion from within (an "internal" labor market). Jobs in the secondary sector involve low job stability, little training, and poor promotion opportunities. The primary sector is typified by large manufacturing establishments and the secondary by small service sector firms. There is however a difference in that the nature of employment does not necessarily follow sectoral or firm lines: the same enterprise may offer both regular and marginal jobs. A management traineeship with a major retailer is a regular job; part-time work in the same firm as Father Christmas paid in cash is a marginal job. For this reason, we prefer our own terminology, referring to jobs rather than sectors, although in Section 3 we discuss the dual labor market theories.

In the U.S. there has been a considerable debate about "bad jobs, good jobs" (Gary Loveman and Chris Tilly 1988a, and 1988b and Gosta Esping-Andersen 1990, who also considers West Germany and Sweden). We deliberately avoid such terminology because we do not wish to make value judgments about job attributes. There may be workers who prefer the characteristics of a marginal job to regular employment. At the same time, there are those who argue that the past decade has seen a rise in jobs having "marginal" attributes. In the U.K. the situation has been described by Ralf Dahrendorf as follows:

> Significant numbers find themselves at the margin. . . . If "décasualization," that is the permanent employment of hitherto casual labour, was one of Beveridge's prescriptions against unemployment before the First World War, one observes a certain "recasualization" today. This is not always involuntary, but it leaves a sense of jeopardy. (1988, p. 150)

In the U.S. Katz and Lawrence Summers have referred to

> Evidence suggesting that the bulk of employment growth in the United States has occurred in sectors that are thought to provide "low wage, bad jobs" rather than in sectors that provide "high wage, good jobs." (1989, p. 209)

The extent to which this has happened is controversial, but there are reasons why an increase in marginal jobs might have been expected, notably the measures taken in much of the OECD area to increase labor market "flexibility." Michael Emerson (1988) has noted the change between the 1970s and the 1980s with regard to legislation concerning short-term contract labor:

> The 1970s saw in Europe widespread legislation making these regulations more comprehensive or restrictive. The French government's legislation of 1982 appears to be the last example of the period of tightening regulations. Since then several countries have opened wider opportunities for fixed-term contracts as a way of easing the burden of severe restraints or dismissals. (1988, p. 797)

That this applies also to France is illustrated by the observation in the OECD Employment Outlook that in that country

> Contracts of limited duration are a particular legal form allowing employers to circumvent some of the provisions of employment protection legislation. These latter forms of employment are now numerically more important than agency or temporary work, following rapid growth in recent years. (OECD 1989, p. 181)

Although growth of marginal jobs may have occurred throughout the OECD area, this does not imply that their importance is the same in all countries. There are differences in employment law, notwithstanding some of the common changes referred to above. The U.S. labor market is much less regulated than those in other OECD countries but this is not to say that the rest of the OECD can be viewed as homogenous in this respect. Italy, for example, has a particularly regulated market (Emerson 1988).

The principal reason for making the distinction between regular and marginal jobs is that they are likely to be associated with a different pattern of transitions between labor market states. The probability of job termination varies with the duration of job tenure: for example, the monthly inflow rate to (registered) unemployment of U.K. males in Autumn 1978 was 5.8 percent from jobs of less than a year in length compared with 0.9 percent for jobs of 1–3 years and 0.2 percent for jobs of over 10 years (Jon Stern 1989, Table 6.2). This has a number of explanations, but reflects in part the fact that some jobs are short term by nature; the same data record a fifth of the male inflow reporting that the reason for their entering registered unemployment was that their previous job was only temporary (Douglas Wood 1982, Table 37).

Evidence also suggests that substantial numbers of moves out of unemployment are to temporary jobs; the figures are disproportionately large when viewed in relation to the size of the total temporary job pool (OECD 1987, p. 40). Of those previously unemployed persons shown as in employment in Table 1 above, between one-fifth and two-fifths in each European country had temporary jobs.[6] Evidence from surveys in the Netherlands

[6] The definition of a temporary job clearly needs to be treated with care; it should not preclude employment available on an indefinite basis in which a survey respondent expresses the intention to stay for only a limited period.

in the mid-1980s found that, of those unemployed at the first interview who had found a job when reinterviewed, 43 percent had a temporary job (Wim Groot 1990). The size of the outflows from unemployment to temporary jobs reflects in part the existence of labor market programs providing or subsidizing temporary work. Evidence on the recurrence of unemployment suggests that exits are frequently made to a state, work or otherwise, that is temporary. The proportion of persons experiencing unemployment in 1983 with more than one spell during the year was 21 percent in Australia, 24 percent in Sweden and 32 percent in the U.S. (OECD 1985, Table 37).[7]

In a number of the recent dual labor market models it is assumed that entry to what would be regular jobs (in our terminology) can only take place from unemployment or that the probability of recruitment into a regular job is less for people holding marginal jobs. For example,

> secondary employment may be regarded as a kind of stigma that bars access to the primary sector. To the extent that secondary workers are regarded by primary market employers as "inferior" or "unreliable," some gesture of separation from the secondary market may increase the chance of being offered a primary-sector job. (Ian McDonald and Robert Solow 1985, pp. 1124–25)

Unemployment in this model may therefore be seen as "wait" unemployment, not dissimilar from the time spent searching in a standard search model.[8] The fact that many of those newly hired by employers come directly from other jobs has been advanced as a criticism of the latter model and it might be seen too as undermining the dual labor market version. A significant proportion of employees are engaged in job search and this proportion is higher for those in temporary jobs: in the U.K., 5 percent of male employees were engaged in search in Spring 1984 and this rises to 34 percent for those in temporary jobs (Christopher Pissarides and Jonathan Wadsworth 1988). However, this does not tell us whether these people found regular jobs, and evidence is needed on the actual flows between marginal jobs and regular jobs before we can assess whether marginal jobs are a "dead-end" or a "way-station" (Esping-Andersen 1990).

D. *Labor Market Transitions: Conclusions*

Whereas it is the transition between employment and unemployment that has been the principal focus of much of the literature on the effects of unemployment compensation, we have argued for a richer treatment of the labor market, distinguishing between unemployment and not-in-the-labor-force, and between regular and marginal employment, and emphasizing the heterogeneity of different categories. This in turn has implications for the analysis of unemployment compensation. Do cuts in unemployment benefit increase the rate of exit from unemployment, but cause people to leave the labor force rather than to enter employment? Does the existence of unem-

[7] The evidence is consistent with jobs being temporary due to the supply side of the market as well as the demand side (and with repeated layoff and recall from the same job). But the number of men unemployed in Spring 1985 in Britain who gave the ending of a temporary job as the main reason for entering unemployment was twice the number who reported voluntary quitting (OPCS 1987, Table 4.19). (For single and married women the ratios were 3:2 and 1:1 respectively.) Taking all the unemployed, the ending of temporary employment was cited by 20 percent of those who had left a job within the last three years.

[8] An alternative explanation of wait unemployment may be given in terms of worker preferences and the relative status of the two types of employment (Theo van de Klundert 1990). Yet another approach examines the implications of signaling (Barry McCormick 1990) and of firm-specific training and screening in the hiring process (Nils Gottfries and McCormick 1990).

ployment insurance lead to job losers registering as unemployed rather than leaving the labor force? Does unemployment compensation provide the security that allows people to give up their jobs and acquire training? Is the effect of retrenchment in unemployment compensation to increase the outflow from unemployment to regular jobs or is it an increase in marginal employment which is induced?

As hardly needs stressing, the representation of the labor market adopted here is oversimplified. We are, for example, treating the states as exclusive, whereas a person may be in part-time employment and at the same time in training or education, or he may—legally or illegally—be in paid work while also registering as unemployed. We have not considered explicitly the life-cycle aspects. The transitions to and from training are likely to be particularly important for those in the younger age groups, as is the transition from not-in-the-labor-force for women returning after they have had children; retirement may take the form of moving from regular employment to marginal employment, or unemployment, before leaving the labor force.

II. *Unemployment Compensation in Theory and Practice*

A. *Instititional Features of Unemployment Insurance*

Beginning their review in the *Handbook of Labor Economics* of different explanations of the natural rate of unemployment, George Johnson and Richard Layard observe that in a simple market-clearing demand and supply model of the labor market, unemployment benefit increases the level of unemployment. This effect, they note, is "as in all our models" (1986, p. 923). If one looks at the models in question, one finds that the unemployment benefit with which they are concerned is of the following "hypothetical" form:

(*a*) the benefit is paid irrespective of the reasons for entry into unemployment,
(*b*) it is paid for all days of unemployment, from the onset of a spell,
(*c*) it is independent of the person's efforts to search for new employment, or of his or her availability for work,
(*d*) there is no penalty to the refusal of job offers,
(*e*) there are no contribution conditions related to past employment record,
(*f*) the benefit is paid at a flat rate,
(*g*) benefit is paid for an unlimited duration,
(*h*) eligibility for benefit is not affected by the level of income of other household members.

In other words, it is quite unlike any real-world system of unemployment compensation.

With some notable exceptions—which we discuss below—the theoretical literature on unemployment benefit largely ignores important institutional features of actual social security schemes. (Nor are empirical analysts free from fault. Although some empirical research has taken careful account of the workings of unemployment benefit systems, this is not invariably the case, as we discuss in Section 4.) Unemployment compensation is often treated as if it were simply the wage of the unemployed, as illustrated by such assumptions as "the wage income when working is w, and is b when not working" (Andrew Oswald 1986, p. 369). This might be the case if the conditions (*a*)–(*h*) listed above applied, but in reality to characterize the unemployment insurance (UI) schemes typically found in OECD countries they should be replaced by conditions like the following:

(a') benefit is refused where a person has entered unemployment voluntarily or as a result of industrial misconduct,

(b') benefit may not be paid for an initial period, or where there is short-time working,

(c') benefit is conditional on the person making genuine efforts to search for new employment, and on being available for work; this may require registration at a state employment agency,

(d') refusal of suitable job offers, beyond some specified number, leads to disqualification for benefit,

(e') the benefit is contributory, with contributions typically paid by employers (possibly on an experience-related basis) and employees according to a schedule related to earnings, and where there are contribution conditions for UI benefit with eligibility depending on past record of insured employment,

(f') the amount of benefit received may depend on past earnings,

(g') UI benefit is paid for a limited duration, and the rate of benefit may decline over time.

As UI is typically determined on an individual basis, it does not depend on the income received by other household members, so that condition (h) is satisfied.[9]

The single most important consequence of these conditions is that people may be unemployed but not in receipt of UI. Unemployed people not receiving UI will include those who are refused benefit on the grounds that they are voluntarily unemployed or have been dismissed for industrial misconduct (a'), those waiting to become eligible (b'), those disqualified for failing to carry out job search (c'), those not eligible because they fail to meet the contribution conditions (e'), and those who have exhausted their entitlement (g').

It is for these reasons that only a fraction of the unemployed receive UI, a fact that is frequently overlooked. The proportion of the unemployed receiving UI in the U.S. in 1987 was estimated as less than 30 percent (Rebecca Blank and David Card 1989). This figure refers to the unemployed defined as those engaged in job search. A figure of 26 percent for Britain in 1988 refers to the proportion in receipt of UI in relation to those registered as unemployed.[10] The most important reasons for absence of UI in Britain were the failure to satisfy condition (e')—insufficient contributions to qualify—and the impact of condition (g') through the exhaustion of the duration of entitlement; these two reasons accounted for 31 percent and 49 percent of nonreceipt respectively. Condition (a'), which has applied in Britain since the introduction of unemployment compensation in 1911, means that currently some 8–10 percent of new claims to UI are disqualified for voluntary quitting or misconduct.[11] The maximum disqualification period is six months. Finally, there is condition (c'), under which claimants in Britain are required to "actively seek work" and are expected to keep records of job applications and ad-

[9] An exception is where dependant's additions are conditional on the dependant not receiving income in excess of a specified amount, as in the U.K. where the unemployment insurance addition for a dependant wife is paid only where she earns less than this amount (Atkinson and Micklewright 1985, ch. 2).

[10] Our own calculations based on unpublished administrative analyses of a five percent sample of the unemployed taken in November. We are grateful for financial support from the Nuffield Foundation for this work, further details of which are reported in Micklewright (1990).

[11] Information supplied to us by the Department of Social Security.

vertisements followed up which they must produce on demand. Failure to seek work may again lead to disqualification.[12] In the U.S. the major reasons for disqualification are voluntary separation without good cause, discharge for misconduct, refusal to apply for or accept suitable work, or involvement in a labor dispute (U.S. Department of Health and Human Services 1989, p. 21). Disqualification from benefit may be for a specific period or for the entire unemployment spell, and may in some states reduce the amount paid in a given period of unemployment.

The U.S. and the U.K. may be rather extreme cases so far as their low coverage of UI is concerned, but the existence of a sizeable fraction of the unemployed who do not receive UI is a feature of other OECD countries. The proportion of the registered unemployed in receipt of UI in December 1988 was some 40 percent in West Germany (Bernard Brunhes and Denise Annandale-Massa 1989). In the case of Sweden, over the period 1978–1985 of all unemployed individuals 30–40 percent received neither UI nor the complementary KAS payment (Anders Björklund and Bertil Holmlund 1989, p. 169).

The extent of coverage is likely to vary with the characteristics of the individual worker. This applies particularly to the contribution conditions. Young workers are less likely to have accumulated the necessary entitlement, as are women returning to the labor force. There may well be differences by type of employment. The self-employed are typically not covered by UI, and part-time workers may be excluded by minimum hours or earnings requirements. Our earlier distinction between regular and marginal jobs is relevant. The latter are less likely to be covered by UI, insofar as the eligibility conditions in most countries require a substantial spell of employment within a given period. Those in precarious jobs are less likely to have built up an UI contribution record. Black economy jobs paid in cash will preclude UI contributions.

The coverage of UI may also be judged in relation to the extent to which it compensates for temporarily reduced employment (rather than job *loss*). When faced with a fall in demand, a firm might wish to lay off a fifth of its workforce but could instead put all workers on a four day week.[13] An alternative would be for the workforce to work reduced hours over five days. One of the factors influencing the outcome is the availability of unemployment compensation for the single day of unemployment involved in such "short-time working" or for the hours not worked under the third option. The availability, or the lack, of unemployment benefit during short-time working represents an important institutional difference between OECD countries. It is argued sometimes that short-time compensation is possible in Europe but not in North America with the implication that this is an important explanation for the higher amount of layoff unemployment in North America. This greatly oversimplifies the situation (Bernard Grais 1983). The details of the treatment of "compensated" short-time working in Europe are more complicated than first

[12] Under the provisions in force in 1990, when registering as unemployed, each person is told that he is allowed to restrict the type of job for which he is looking for a certain "permitted" period and it is only during this period that a job offer can be turned down on the grounds of the level of the wage. At most this can be for three months but some claimants may be allowed no "permitted" period at all.

[13] The Italian Cassa Integrazione Guadagni (CIG) also covers both short-time working and temporary layoffs and in fact has developed into a shadow unemployment benefit scheme. In small- and medium-sized firms and where unions are strong, CIG is used more to fund short-time working rotated among employees than to fund permanent layoffs (Fiorella Padoa-Schioppa 1988).

meet the eye and vary considerably from country to country.[14]

The case of Britain shows that an unemployment compensation scheme may appear to provide an incentive for both firm and worker to agree to short-time working, but the details of the scheme and their interaction with employment law may alter this considerably. In Britain, in 1990, unemployment benefit can be paid for a day of unemployment, although not for reduced hours spread across the whole working week. However, the conditions are such that in practice short-time work is strongly discouraged. Days of unemployment are linked together into one spell for the purposes of benefit entitlement when they are separated by no more than five days (not counting Sundays), and benefit is not payable for the first three days of such an unemployment spell, postponing any entitlement. Moreover, under employment protection law, the firm may in certain circumstances be liable to pay full wages for the first five days of layoff or short-time working and the three waiting days are served following this period. In other countries, the payment of unemployment compensation during short-time working is subject to special conditions. The West German system is described by Grais (1983) as neutral between layoffs and either method of short-time working outlined above, but benefit can be withheld if labor demand is considered strong and is only payable if a sufficient proportion of a firm's workforce is affected.

Finally in this section, we must refer to the financing of UI through contributions (condition e'). The details vary considerably across countries. For example, UI in Belgium is largely funded out of general taxation while employer contributions provide all the finance in the U.S. Britain has in the past had tripartite contributions finance from firms, employees, and state; the cost is now borne by employers and employees. These differences would imply differing effects of, for example, experience-rating of employer contributions since the employer contribution varies substantially between the three countries. It should also be noted that in Britain there is no separate UI fund, contributions from the employer (and employee) being a general social insurance contribution covering a variety of contingencies. Experience-rating of employer UI contributions would therefore be difficult from a practical point of view, there being no separate UI contribution identified. Yet another variation in financing is found in the Scandinavian countries; in Sweden, Finland and Denmark, the UI funds have close ties with the trade union movement. The implications of union-operated UI funds are examined by Bertil Holmlund and Per Lundborg (1988).[15]

To summarize, unemployment insurance (UI) differs in significant ways from the hypothetical form (*a*)–(*h*) set out at

[14] It is also the case that, although the payment of UI in the United States during short-time working has not been possible in the past, it is now permitted in 14 states, including five of the six with the largest employment nationally (U.S. Department of Health and Human Services 1989, p. 25).

[15] We do not consider in this paper unemployment insurance which may be provided by employers. In the United States, there are supplemental unemployment benefits paid by employers to workers on temporary layoff, negotiated as part of collective bargaining. Such employer benefits have been highlighted in the theory of implicit contracts with asymmetric information (Sanford Grossman and Oliver Hart 1981), but their empirical relevance appears limited. In U.S. manufacturing in 1980 such plans covered about 50 percent of workers in unionized plants and companies with at least 1000 workers, but the percentage was very small (4%) outside manufacturing (Oswald 1986, Table 1). A total of only $636 million was paid out in supplemental benefits in the U.S. in 1987 a figure which represents less than five percent of the total paid by state UI programs (Wilmer Kerns and Milton Glanz 1989, Table 6 and *Social Security Bulletin*, Oct. 1989, Table M-34).

the beginning of this subsection. In what follows we take UI to be characterized by the conditions (*a'*) to (*g'*), and (*h*), noting that these conditions typically mean that a sizeable proportion of the unemployed are not covered by UI.

B. *Unemployment Assistance*

As we have observed in the introduction, it is important to distinguish between unemployment insurance and unemployment assistance (UA). Unemployment assistance differs from UI in several crucial respects. In part, these mean that UA is closer to the hypothetical form (*a*)–(*h*). UA is by definition noncontributory, and with eligibility independent of employment history, this means that condition (*e*) of the hypothetical form applies to UA. Similarly, in a number of countries, but not all, UA is paid without limit on duration (condition *g*). But the most important feature of UA is that it is subject to a test of means:

(*f''*) the amount of UA benefit received depends on other income and on assets via a means-test,

Typically, this test limits the total income received, including UA, so that no benefit is paid where total income exceeds a specified level, and the asset test may preclude receipt of UA where total capital exceeds a specified amount. The income/assets test is typically applied either to the inner family (husband, wife, and dependent children) or to the household as a whole, so that

(*h''*) the amount of UA benefit is affected by the level of income and assets of other household members.

Finally, UA typically shares with UI the conditions (*a'*)–(*d'*).

The fact that UA is not subject to contribution conditions, and that there may be an indefinite duration, means that UA may have a more extensive coverage. Put another way, many of those not eligible for UI may be covered by UA. At the same time, the coverage is not complete. As with UI, the unemployed may be refused benefit on grounds that the unemployment is voluntary or disqualified for refusing job offers or failure to carry out job search.[16] Unlike UI, the unemployed may be precluded from benefit by the operation of the means-test. An unemployed person with a working partner may be ineligible for UA because their joint income exceeds the specified limit. This may be particularly important for married women, if the operation of the means-test implies that exhaustion of UI entitlement results in a complete loss of unemployment compensation. Taking men and women together, nearly one in five of those registered as claimants in Britain in November 1988 were in receipt of neither UA nor UI (Micklewright 1990). In West Germany in December 1988 over a third of registered unemployed received neither Arbeitslosengeld (UI) nor Arbeitslosenhilfe (UA).

It is also a consequence of the means-test that the impact of UA on work incentives may be quite different from that of UI. Most importantly, it imposes a high effective marginal tax rate on the earnings of the partners of unemployed persons, an aspect to which we return in Section 4. Equally, it may act to discourage savings, since capital enters the means test either via the income test or via a separate assets test.

A second effect of the means-test is to deter the unemployed from claiming the benefit to which they are entitled. Incomplete take-up of entitlement to means-tested social security programs appears to be a serious problem in a num-

[16] A recent example is the new revenu minimum d'insertion in France, where income support is linked to measures for "re-integration into society."

ber of countries, reducing still further the effective coverage of benefits. Failure to claim may reflect imperfect information, as where potential beneficiaries wrongly believe they are ineligible; they may be aware of eligibility but fail to claim because of the transaction costs; they may not wish to be identified as receiving assistance they feel to be stigmatizing.[17]

To summarize, unemployment assistance (UA) differs in important ways from unemployment insurance, with conditions (e), (f''), (g) and (h'') replacing (e'), (f'), (g') and (h). Again there are significant respects in which the coverage falls short of all unemployed workers, notably as a result of its means-tested nature.

TABLE 2

UNEMPLOYMENT INSURANCE AND ASSISTANCE IN THE OECD IN 1987

Unemployment Insurance (UI) only Belgium, Canada, Denmark, Iceland, Italy, Japan, Luxembourg, Norway, Switzerland, United States.
Unemployment Insurance (UI) and Unemployment Assistance (UA) Austria, Finland, France, Germany, Greece, Ireland, Netherlands, Portugal, Spain, Sweden, United Kingdom
Unemployment Assistance (UA) only Australia, New Zealand
No UI nor UA scheme Turkey

Source: OECD (1988, p. 114)

C. *Unemployment Compensation in OECD Countries*

We have identified the principal institutional features of UI and UA. We now relate these to the unemployment compensation schemes in force in the OECD area, emphasizing those aspects particularly relevant to the theoretical and empirical analysis of its economic impact. Although we illustrate our arguments with reference to some of the details in specific countries, it is not our aim to provide a detailed guide to unemployment compensation.[18] Such a task would require more space than is possible in this paper, and, in any event, details of schemes are continually changing.[19] We hope that by concentrating on the general nature of schemes, we can help readers who need the details to ask the right questions.

Even the apparently simple question of the *type* of unemployment compensation system in each OECD country—UI and/or UA—is difficult to answer. On the face of it, the 24 member countries can be classified into four groups as in Table 2, but

> this classification, however, is useful only to a limited extent . . . attentive examination of the special provisions of each scheme shows that only in a very few cases is the classification of schemes in the "insurance-" or "assistance-" categories unequivocably justified. (OECD 1988, p. 116)

For instance, the Swedish scheme, KAS, which runs complementary to the regular UI and is intended for those who do not satisfy the UI eligibility require-

[17] Atkinson (1989, ch. 11) discusses the general issue of take-up; the evidence for a range of means-tested benefits is cited in Atkinson (1987). Evidence for UA in Britain is examined by Atkinson and Micklewright (1985); the experience with Sozialhilfe in West Germany is reviewed in Thomas Klein (1987).

[18] A valuable, if now dated, survey of unemployment insurance schemes is provided by Saul Blaustein and Isabel Craig (1977). See also CERC (1983) and Brunhes and Annandale-Massa (1989). An excellent overview is given in OECD (1988, ch. 4).

[19] In Atkinson and Micklewright (1989) we provide details of some 38 changes in the system of unemployment compensation in the U.K. during 1979–88. The *Monthly Labor Review* regularly gives details of changes in the U.S. In this paper we add the most recent information available to us (summer 1990).

ments, is nonetheless of limited duration, is not means-tested, and depends on employment history—all characteristics of UI. In Spain and Portugal a means-tested benefit is payable for only limited duration. Eligibility for UA in West Germany depends on the employment record. These examples illustrate not only the difficulties of classification; they underline the dangers of generalizing from theoretical or empirical results pertaining to the unemployment compensation scheme of a particular country.

A second reason why the classification in Table 2 is misleading is that it does not include all income support schemes to which the unemployed may apply. In particular, as well as means-tested benefit schemes specifically for the unemployed, account needs to be taken of "general assistance" or "social welfare aid." However,

> Because the treatment of unemployed people under social welfare aid schemes differs widely, not only from one country to another but also within each country, it is not easy to assess or measure the impact of such aid. But no study of unemployment benefit systems can be complete without considering it. (OECD 1988, p. 119)

In neither Britain nor the U.S. is there an explicit UA scheme for the unemployed, but the means-tested welfare benefit, Income Support (previously Supplementary Benefit), plays the role of UA in Britain in a way that is not matched by welfare programs in the U.S. Indeed, on the strength of this scheme, Britain has been classified by the OECD in Table 2 (rightly, in our view) as a country with a dual UI/UA system.

In the U.S., welfare benefits vary considerably between states (as does UI), only half of which, for example, paid assistance in 1982 under the AFDC (Aid for Families with Dependent Children) program to families with an unemployed head (Arthur Williams, John Turnbull, and Earl Cheit 1982, p. 494).[20] Food Stamps and Medicaid provide in-kind benefits on a national basis and General Assistance acts as a residual program for childless couples and others ineligible for AFDC, but these programs do not constitute a nationwide safety net for the unemployed. For this reason the U.S. is indicated in Table 2 as having only a UI scheme. Nevertheless, the existence of welfare programs in the U.S. for those without UI should not be ignored and from 1 October 1990 *all* states are required to have an unemployed parent AFDC program (U.S. Department of Health and Human Services 1989, p. 67). For the married couple with children, this moves the U.S. towards a dual UI/UA system, and a situation similar to that in Spain where UA can only be claimed by family heads. It should, however, be noted that the receipt of AFDC is typically subject to much more stringent search requirements than UI, that entitlement may be for a limited period, and that, like UI, States remain free to choose their own benefit levels.[21]

As the example of Britain illustrates,

[20] Nonetheless a substantial number of families were in receipt of AFDC(UP): 194,000 in August 1988. At that date, 2.5 million individuals were in receipt of UI (U.S. Dept. of Health and Human Services 1990, Tables M-30 and M-34).

[21] The level of monthly AFDC in California could be three times that in Kentucky (Gary Burtless 1990). (Payments under the unemployed parents program in any state must be at the same level as to other AFDC recipients.) The search requirements of AFDC are discussed by Judith Gueron (1990). The 1990 extension of AFDC-UP (the unemployed parents part of the program) was mandated under the 1988 Family Support Act. Under this act,

> States that have an AFDC-UP program as of September 26, 1988 are required to continue operating the program without any time limit on eligibility. Other states will have the option to limit cash assistance to as few as 6 months in any 12 month period. (U.S. House of Representatives 1990, p. 546)

If the unemployed parent works 100 hours or more a month then all entitlement to AFDC is lost, creating a discontinuity in the budget constraint.

European countries have, in the main, substantially more extensive UA or general assistance benefit schemes for those not entitled to UI or who exhaust their entitlement. This represents an important institutional difference between the U.S. and many other OECD countries. Another example is provided by West Germany where there is a three-tier system: an explicit UA program (Arbeitslosenhilfe) alongside UI (Arbeitslosengeld) as well as a general assistance benefit (Sozialhilfe) for which the unemployed may apply. The last of these displays some local variation (although less than general assistance in the U.S.; Stephan Leibfried 1979) and this is a characteristic of assistance benefits in most countries.

The coexistence of UI and UA does not mean that they can be regarded as interchangeable, and too often they are treated as synonymous. For example this occurs, not infrequently, in discussion of the duration of entitlement to unemployment compensation in different countries. The first column of Table 3 repeats a classification drawn up by Layard (1989) and used by him when commenting on differences across countries in the amount of long-term unemployment. In the second column we have attempted to provide fuller (although still not complete) information on entitlements.

The first column in Table 3 cannot help but suggest that the duration of unemployment benefit is the same ("indefinite") in Belgium, Britain, the Netherlands, and West Germany. The fuller information in the second column, however, makes clear that even if we ignore what are finite limits in Belgium and the Netherlands there is a different mix of UI and UA in these four countries. In Belgium it is purely a question of UI. In Britain UA is much more relevant. In 1988, the number in receipt of UA were more than double those on UI, whereas in West Germany UI was much more important. As we have argued, the conditions for the payment of UI and UA differ in significant ways. The extent of coverage is different, as is the amount of benefit. The benefit level on UA is typically lower. In West Germany, the benefit-earnings ratio is some ten percentage points lower for UA (both UI and UA are linked to past earnings). In addition the income-test leads to a reduction of UA for a significant minority of recipients as well removing the entitlement altogether of others.[22] In Britain, neither UI nor UA are related to past earnings (an unusual feature among OECD countries), and the relationship between the benefit levels under the two schemes is such that UA entitlement can exceed UI. Nonetheless, we have estimated that the UA means-test would reduce the income level below UI for the majority of unemployed men.[23] The distinction between UI and UA does, therefore, matter as far as the level of benefit is concerned. to talk about these countries as having "indefinite" benefits for the unemployed is to gloss over an important distinction. And to label the U.S. as having benefit duration fixed at six months is to ignore the welfare benefits described earlier as well as the possibility of extended UI entitlement in high unemployment regions which has been in force at certain dates. As the OECD has commented, UI compensation systems "are extremely difficult to compare" (1988, p. 126).

As the example of means-testing illustrates, it is important to know how the rules relating to unemployment compensation work "on the ground." Table 3

[22] In April 1983, a third of those receiving UA in West Germany had their payments reduced by the means-test (Beatrice Reubens 1989).

[23] This statement refers to a sample of 845 men unemployed for less than a year in the 1970s. In two-thirds of cases exhaustion of UI entitlement would have implied a reduction in benefit, the fall being on average enough to reduce the ratio of benefit to last earnings by eight percentage points (Atkinson and Micklewright 1985, Table 7.5).

TABLE 3

DURATION OF ENTITLEMENT TO UNEMPLOYMENT COMPENSATION

	1. "Duration of Benefit" Layard (1989, p. 225)	2. Fuller Information
Belgium	"indefinite"	UI: No limit except where unemployment is "protracted or recurs with unusual frequency" or if claimant is a "worker with voluntary reduced hours." No UA.
Britain	"indefinite"	UI for up to 12 months (duration depending on recent record of employment). Possibility of means-tested UA instead of, during, or after UI.
Netherlands	"indefinite"	UI at 70% of last earned wage for between 6 months and 5 years depending on contribution record, plus one year of benefit at 70% of minimum wage (with special provisions for older workers). Income-tested UA up to minimum wage. On expiry of UI, possibility of means-tested assistance.
Germany	"indefinite"	UI for between 6 months and 32 months depending on employment history and age (12 months maximum if aged less than 42). Possibility of means-tested UA (subject in addition to employment history) instead of UI or thereafter.
France	"30 months"	UI for between 3 months and 60 months depending on employment history and age. For those with full contributions 30 months if aged under 50, 54 months aged 50–54 and 60 months aged 55 and over. Followed by possibility of discretionary solidarity allowance, paid for 6 months with possibility of repeated renewal.
Sweden	"14 months"	UI for 60 weeks if aged under 55; 90 weeks if aged 55 or over. Non means-tested UA (KAS benefit) dependent on employment history for 150 days (more if aged 55 or over).
U.S.	"6 months"	UI for between 1 week and 9 months depending on State, employment history, and unemployment rate. Possibility of means-tested welfare benefits depending on family status and location.

Sources for column 2:
Belgium, Britain: Commission of the European Communities (1988, Table XI-2)
France, Germany: Brunhes and Annandale-Massa (1989)
Netherlands: *International Social Security Review* (1989, number 3, pp. 326–39)
Sweden: Björklund and Holmlund (1989), Nordisk Udredningsserie (1986)
U.S.: Department of Health and Human Services (1989, Table 5)

gives no indication of this. What proportion of the unemployed actually qualify for UI? How frequently does means-testing eliminate the entitlement to UA? The real operation of schemes may differ from that suggested by a reading of social security manuals. This may cut both ways as far as coverage is concerned. In emphasizing the conditions under which UI and UA are paid, we are not suggesting that they are always rigorously enforced. A "genuinely seeking work test" may be

difficult to enforce. Industrial misconduct (condition a') is not easily defined:

> it can cover a wide range of disruptive behaviour and bad work, which is causally connected with the loss of employment, and where there is evidence of fault. (Paul Fenn 1980, p. 243)

This may not be easy to determine, and there may well be instances of voluntary unemployment that escape detection. As a result, the disqualification provisions may not apply in all cases. Against this, errors may be made in the opposite direction. The social security agency may wrongly accept the employer's version of the reason for dismissal. A person may be held to be unavailable for work on account of having young children when in fact provisions can be made for child care. The administration of unemployment benefit may in this way involve Type I error as well as Type II, with some eligible claimants being denied benefit, as well as some ineligibles allowed receipt.[24]

D. *Conclusion*

Unemployment compensation is not simple to describe and differences between countries are not easy to summarize. But this does not justify treating unemployment compensation as the "the wage when not working" nor does it justify reducing comparisons of actual benefit systems to single parameters like the benefit rate or the duration of benefit.

III. *Unemployment Compensation and the Theory of Labor Market Transitions*

This section provides a selected review of the theory of labor market transitions and the impact of unemployment compensation. Our point of departure is the two-state model of employment and unemployment that has dominated the literature, beginning with the job search model. We ask (i) how far has it allowed for the institutional features of unemployment benefit that we have just described, and (ii) what difference do these institutional features make to the conclusions drawn? The second theme is the extent to which it is possible to incorporate a richer treatment of the labor market, of the kind discussed in Section 1.

A. *The Job Search Model*

In the "standard" job search model, the distribution of offered wages is treated as exogenous and the strategy of the unemployed worker is described in terms of a reservation wage, a job being accepted if and only if the offered wage exceeds this level. The reservation wage rises with the level of unemployment benefit, and this leads to the prediction that increases in unemployment compensation lead to a reduced probability of making the transition from unemployment to employment.

In more detail, the standard model (for example, Steven Lippman and John McCall 1979) assumes that a person is concerned with the expected present value of income over an infinite horizon, discounted at rate δ. A job once accepted is assumed to last forever at a constant wage, w. The person is assumed to receive job offers at a constant rate α per unit of time (in the present version of the model the intensity of search is assumed fixed), and the probability of a job offering a wage of at least w is the same, $1 - F(w)$, at all dates (there is a stationary distribution of wage offers). Past job offers cannot be recalled. When out of work the person has a value of leisure, or home production, v. If the level of unemployment compensation is assumed constant over time, and is denoted by b, there is a stationary reservation wage, w^*, which must satisfy the

[24] For discussion of the balance between these types of error, see Robert Goodin 1985 and Atkinson 1990a.

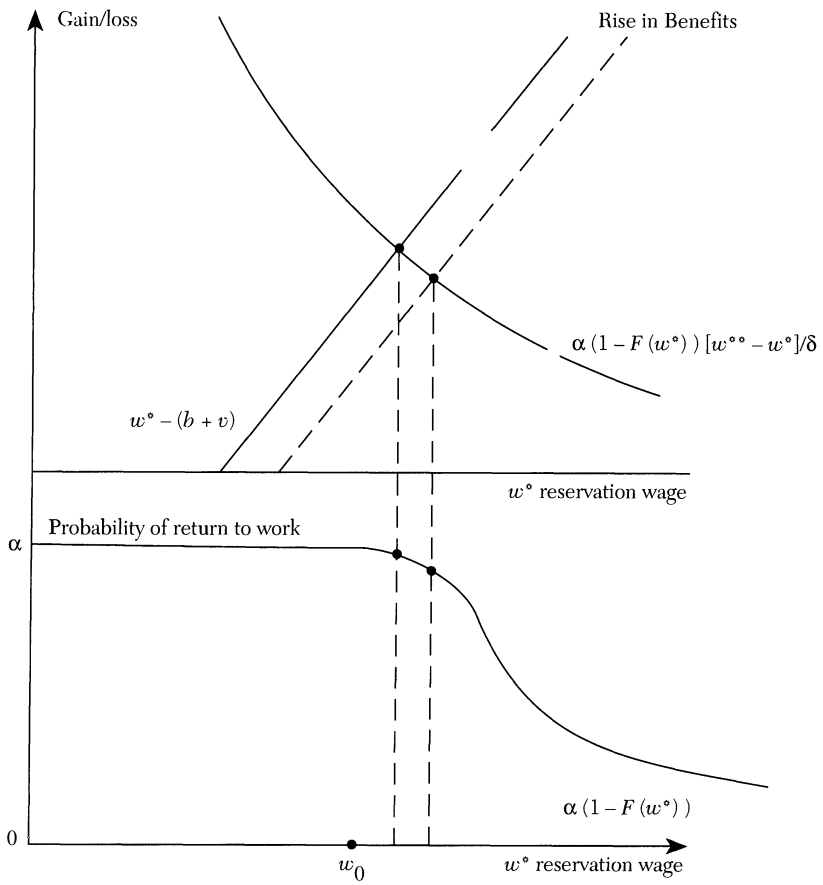

Figure 1. Reservation Wages and Benefits in the Standard Job Search Model

following condition (see, for example, John Hey 1979, ch. 14):

$$w^* - (b + v) = \alpha(1 - F(w^*))[w^{**} - w^*]/\delta$$

where w^{**} is the expected wage conditional on $w \geq w^*$.

The choice of the reservation wage may be seen as balancing, on the left hand side, the increased income from accepting w^* today against, on the right hand side, the improvement over w^* expected from holding out, where this improvement is an infinite stream and hence is discounted at a rate δ. This is illustrated in Figure 1. Where w^* is greater than the lowest wage which is offered, $w_{o'}$ a rise in the benefit leads to a reduction in the probability of return to work, as shown. This is the standard prediction. On the other hand, if w^* is less than $w_{o'}$ then the person would accept any job offer, and the probability of return to work is simply α—see the lower part of Figure 1. In this situation an increase in benefit would have no effect, at least within a certain range.

To what system of unemployment compensation does this analysis correspond? Is it UI? First of all, it is obvious that the assumption of an unlimited duration of benefit is an inappropriate one. The limited duration of benefit, condition (g') in the schema of Section 2, means that the problem is no longer a stationary one, and account has to be

taken of the time to expiry of entitlement. The implications have been examined by Dale Mortensen (1977) and Kenneth Burdett (1979), two of the relatively small number of scholars who have paid attention to the real-world features of unemployment compensation. Where UI is paid for a period T, the reservation wage of a UI recipient falls with the length of the unemployment spell until T is reached (Mortensen 1977, p. 511). For a person who has exhausted his UI entitlement, the level of benefit has no effect on the probability of return to work.

On the other hand, this conclusion has to be qualified if we take account of a second feature of UI—that eligibility depends on past insured employment (condition e'). If return to employment means that he requalifies for benefit, then UI makes the transition to employment *more* attractive:

> an increase in either the benefit rate or the maximum benefit period induces an increase in the indirect utility of being laid off in the future as well as the indirect utility of remaining unemployed during a current spell in the case of a qualified [for UI] worker. Because employment is more attractive as a consequence of the first effect, it tends to offset the increase in the incentive to remain unemployed implied by the second. Indeed, the first effect dominates if the worker is near the end of his or her benefit period or has exhausted benefits receivable during the spell. (Mortensen 1977, p. 511)

Put another way, where there is a risk of future unemployment, the existence of UI reduces the risk incurred by returning to work.[25] This illustrates the fact that UI may have positive as well as negative effects on the transition from unemployment to employment (José Usategui 1989).

The essential function of UI is indeed to provide for job *loss*. The assumption in the standard search model that a job, once accepted, lasts forever means that it is not a suitable vehicle to analyse the impact of UI:

> After all, unemployment insurance is supposed to be insurance against the misfortune of becoming unemployed, and not simply a subsidy to prevent starvation while searching for a suitable (lifetime) occupation. (Hey and Mavromaras 1981, p. 318)

(Nor is it appropriate to assume that those searching are new entrants to the labor market, since they would then not have acquired the earnings record necessary to receive UI.) The introduction of future job loss is also important insofar as there is a choice by workers between jobs with different probabilities of subsequent permanent layoff. Burdett and Mortensen (1980) consider the effects of UI where workers choose between jobs with different wages and different layoff probabilities (the results are described below). Insofar as jobs with a high probability of termination correspond to our category of "marginal jobs," this may be seen as casting light on the effect of unemployment compensation on whether people leave unemployment for regular or marginal employment.

The aspects of UI on which we have concentrated to date are its limited duration and its relation to the past record of insured employment. These are not in general relevant to UA, and the literature we have cited could be interpreted as applying to UA rather than UI. How-

[25] The analysis of Burdett (1979) also allows for the feature (f') of UI in that he examines the implications of the benefit being a linear function of the pre-unemployment wage, up to a ceiling, which is typical of the benefit formula in many countries. A general earnings-related formula is considered by John Hey and Kostas Mavromaras (1981), who make an explicit comparison with a flat-rate benefit. This has been further developed by Mavromaras (1987), who, in a general equilibrium setting, shows in numerical simulations, that a (first round) expenditure-neutral switch from flat-rate payments to a benefit immediately proportional to the previous wage reduces the equilibrium unemployment rate.

ever, this overlooks the role played by the conditions (c') regarding job search and (d') regarding refusal of job offers, which apply to both UI and UA. A number of models have made job search endogenous, the probability of receiving a job offer being conditional on the amount of time or money spent on search.[26] The standard result is that a rise in benefits reduces the time per week unemployed spent searching, thus reducing the probability of transition to employment, but that the money spent on job search may increase. If time spent and market expenditures are complementary inputs, then the total effect may be ambiguous (Frederick Tannery 1983). Similarly, if we assume that there are binding restrictions on the capacity of the unemployed to borrow to finance search activity (John Flemming 1978), it is then possible that unemployment compensation would increase the resources devoted to search and hence increase the probability of return to work (Moshe Ben-Horim and Dror Zuckerman 1987).

Several authors have considered the type of search, as opposed to its intensity. In the two-period search model of Lawrence Kahn and Stuart Low (1988), the unemployed are seen as choosing between systematic search, which involves collecting information on the wages offered by specific firms and random search of the conventional type where the worker elicits offers from a distribution that is known a priori but where the searcher is ignorant of the particular offer any firm will make. Systematic search is assumed costly in both time and money but is more likely to lead to an acceptable wage, conditional on an offer being made. Unemployment compensation raises the reservation wage under random search and hence reduces the exit probability, but encourages people to carry out more systematic search to obtain information about jobs on offer.

Unemployment compensation may induce greater or more effective search activity on a voluntary basis, or it may be the result of the conditions under which benefit is administered. Although reference is made on occasion to the relevance of search activity to the conditions of eligibility for benefit (for example, Martin Baily 1977, p. 386), this is not typically made explicit in the analysis of the effects of unemployment compensation. The probability of disqualification if search activity falls below some minimum required level needs to be introduced; as does the discontinuation of benefit where a person rejects suitable job offers. The current U.K. regulations, referred to in the previous section, do in fact mean that a person setting a reservation wage may render himself subject to disqualification.

In terms of modeling these administrative restrictions, a number of contributions to the literature contain elements that are relevant, but they are rarely applied to the concrete analysis of unemployment compensation. Randall Wright (1987) draws attention to the crucial role played by the assumptions whether or not a person may sample new jobs at once after quitting or being laid off. This is a valuable clarification, but more important in reality than the delay in being able to search for a new job offer is likely to be the delay in receiving unemployment benefit in the event of quitting, whereas he makes only a passing reference to the latter possibility. Such a delay may arise either because the worker is subject to disqualification or simply because of waiting days (condition b').

The analysis of the monitoring of bene-

[26] Mortensen (1977) assumes that the probability of a job offer is proportional to the amount of time spent searching, the cost of search being foregone leisure; John Barron and Wesley Mellow (1979) allow the probability to depend both on time and on money spent.

fit receipt introduces a source of uncertainty additional to that arising from the uncertain arrival of wage offers. Uncertainty about the system of unemployment compensation may be just as important. Those entering unemployment may be uncertain as to their entitlement: in the United Kingdom in 1988 a quarter of those unemployed 4–6 weeks were still waiting for their UI benefit claim to be determined (Micklewright 1990). Loss of benefit may be feared even if the person is fulfilling the conditions. As we have noted, there may be Type I errors in administration. Means-tested benefits in particular seem liable to generate these anxieties, since they involve in addition the income and capital tests. There may also be uncertainty concerning benefits in work. This has been investigated by Stephen Jenkins and Jane Millar (1989), who stress that making the transition from unemployment to work involves a risk in that the level of in-work benefits (such as means-tested assistance to working families) is not known in advance and is subject to uncertainty. In their analysis they allow for risk aversion on the part of workers, which is evidently a more realistic assumption than that of risk neutrality made so far here.

There are indeed a number of features of the present model that are either unrealistic or that need to be relaxed in a full model of the labor market. Most importantly, we have only looked at one side of the market. The worker is assumed to treat the wage offers as exogenously given. The behavior of employers, and their role in filling jobs, has not yet been considered. In the search theory context, there is the central question as to what determines the wage offer distribution. As Michael Rothschild (1973) pointed out, the standard search model is only "partial-partial," lacking an explanation as to why there should be a distribution of wage offers (if there were only one going wage then the job search story would collapse).

Before bringing together the two sides of the market, we may consider the effect of unemployment compensation from the standpoint of an employer who takes as given the conditions on which labor is supplied. Suppose that an employer faces a supply of labor at a given wage, and has to choose between decreasing the hours per worker and decreasing the number of workers. In a detailed analysis of the determinants of the taxable payroll in the U.S., Frank Brechling (1977) shows how the decisions are affected by experience-rating and by the fact that there is an annual ceiling on pay for which employer contributions are payable. Among other items, he draws attention to the fact that the cost, in terms of additional contributions, arising from voluntary quits (this raising the ratio of the taxable to the total payroll for the firm), may lead employers to be "reluctant to hire employees from groups that have a high propensity to quit voluntarily" (1977, p. 492). This may in turn have implications for the willingness of employers to recruit among those currently holding marginal jobs.

The representation of the labor supply side in terms of a specified wage does not allow for the tradeoff between the wage paid and the probability of continued employment, to which we have already referred. The reservation level of utility for workers is one of the ingredients in the implicit contract theories which again focus on the employer side of the market. Firms are assumed to design an optimal contract to share risk arising from uncertain future demand, or to even out known seasonal fluctuations, subject to a reservation utility level (Baily 1977).[27] Alternatively, the contract maxi-

[27] The choice between layoffs and short-time working is discussed in a contract model by Fitzroy and Hart (1985) and Burdett and Wright (1989a). They

mizes the utility level subject to a constraint on expected profits (Feldstein 1976). Tax exempt unemployment benefits and imperfect experience-rating (so that firms do not pay the marginal actuarial cost of a layoff) may provide an inducement for employers to lay off workers. This increases the employment/unemployment transition probability. As the subsequent literature has shown, however, the precise implications depend on the bargaining process (Burdett and Bryce Hool 1983), on the degrees of risk aversion of employees and employers and on the information which both sides possess. Unemployment benefit and layoffs may be positively related even if there is perfect experience-rating (Mortensen 1983), but if the level of benefit payments is set by the government above that which would have existed privately (risk averse workers are assumed) then the cost of layoffs is increased and the incidence of unemployment declines (Robert Topel 1983). An increase in the degree of experience-rating may increase unemployment if firm size is endogenous (Burdett and Wright 1989b).

B. *Equilibrium Theories*

The market approach to search behavior has been the subject of a sizeable literature, which, beginning with Peter Diamond (1971), has sought to explain the existence of an equilibrium nondegenerate distribution of wage offers. Why should there be a persistent need for search? If such a nondegenerate distribution of offers exists, how is it affected by unemployment compensation? Is the effect of a rise in benefits more important for the wages offered than for the acceptance probability?

The equilibrium approach may be illustrated by reference to the work of James Albrecht and Bo Axell (1984), who show how a two-wage (w_0 and w_1) equilibrium may arise where there are two different types of people, differing according to the value of their leisure/home production, v_0 and v_1, where $v_0 < v_1$; and where there is heterogeneity in firms in terms of the productivity of labor. Search is undertaken by new entrants to the labor market. In a dispersion equilibrium, a fraction of firms offer w_1 equal to $(v_1 + b)$, where b is the amount of unemployment benefit, and the remainder offer a wage w_0 which is a weighted average of w_1 and $(v_0 + b)$. The latter wage is the reservation wage of v_0 persons, who therefore accept any job offer; v_1 persons accept only the higher wage offer. In this equilibrium model, in which the wage offer distribution is endogenous, a general rise in unemployment benefit increases the higher wage \$1 for each \$1 increase in benefit. It also increases the lower wage, but, where the density of the distribution of firms according to productivity is nondecreasing, by less than \$1.[28] The equilibrium rate of unemployment rises (under the same condition on the density).

This model of equilibrium search, like others of a similar kind, makes a valuable contribution but also serves to illustrate some of the shortcomings. First, the model has certain predictions which may cast doubt on the real-world applicability of the findings. The reader may for example be surprised that the effect of unemployment compensation is to widen the wage distribution, whereas it is often asserted that its effect is to push up the relative wages of the unskilled. This is

both refer to the comparison of the United States and Western Europe, but the points made earlier about the institutional differences in the UI treatment of short-time working need to be borne in mind. The effect of benefits for short-time working within a firm/union bargaining model is analyzed by Padoa-Schioppa (1988).

[28] Both w_1 and $(v_0+ b)$ rise by \$1, but there is a change in the weights.

linked to the fact that the unemployed in this model are entirely those who are better endowed (in terms of the value of leisure/home production), waiting until they get a high wage offer. Second, the unemployment benefit bears no relation to either UI or UA. The fact that the unemployed consist entirely of those who have not held a job (a job once accepted lasts for a lifetime) means that they cannot have fulfilled the contribution conditions for UI. The fact that they have rejected the offer of a low wage job means that under typical UI and UA schemes they would, at least in principle, have been in danger of being disqualified from benefit.

In ignoring the institutional structure of unemployment compensation, Albrecht and Axell are not alone, as we have stressed earlier; and in the majority of papers dealing with unemployment benefit in an equilibrium setting (such as job-matching models) the benefit is assumed to have very unrealistic properties. Here we concentrate on two contributions which have paid explicit attention to the key features we identified in Section 2.

The analysis of Burdett and Mortensen (1980) serves to illustrate both the role of institutional features of UI and the implications of looking at both sides of the market. They allow for search behavior by workers and the offer of contracts by employers which include the possibility of layoff. Under their assumptions, there exists a wage such that an unemployed worker is willing to accept a job irrespective of the risk of layoff; on the other hand, he can continue to search while employed for a more acceptable job. This means that an employer must pay a premium to retain a worker's permanent attachment. In equilibrium, there is unemployment of both those searching for a position and those attached to a firm but laid off. Burdett and Mortensen use the model to examine the equilibrium effects of UI, where they explicitly treat the fact that new entrants do not qualify for benefit, this being a crucial feature, as we have noted earlier. The effect of UI is, as in the analysis of Feldstein (1976) and others, to reduce the cost of layoff (there is no experience-rating) and it leads firms to increase their desired number of attached workers, which induces a rise in the equilibrium wage. This in turn leads to a reduction in the level of search unemployment as it stimulates more active search by new entrants (who receive no UI). The layoff probability increases on account of the rise in UI but this may be offset by the rise in the equilibrium wage. As the authors comment, the implications are much richer and this model illustrates the variety of effects that unemployment compensation may have.

The second example is the analysis of Pissarides (1979). This is more limited in that he does not seek to explain the wage level (it is assumed that all jobs pay the same exogenous wage), but he provides more detail of the process by which jobs are filled. In particular, he introduces an important real-world feature which we have not so far discussed—a state employment agency. Receipt of UI benefit is conditional on registration by the unemployed with the agency. There is a fixed rate of benefit at a level below the wage rate, so that an unemployed person always accepts a job offer. It is payable to all those out of work. The search of the unemployed is for a vacancy, not for a job with a rate of pay in excess of the reservation wage. (There is equally no search on the job and no voluntary quitting.) Firms either register vacancies at the agency or advertise positions to attract workers searching privately. The agency matches registered vacancies and the unemployed according to a matching function. Unemployed who are not placed by the agency may choose

to engage in private search for a vacancy and those jobs not registered with the agency may be filled in this way. There is an exogenous separation property for each job.

In this model of matching, it is shown by Pissarides that an increase in the rate of unemployment benefit reduces the attractiveness of employment and so reduces the returns from private job search. There is a decline in the number of workers engaged in private search. Firms respond by reducing their advertising and choose to register more of their vacancies with the agency, so that both the unemployed and firms rely more heavily on the state agency. The equilibrium level of unemployment rises. It is possible that a rise in benefit may move the equilibrium to a corner where all matchings take place via the agency, in which case further increases in benefit have no effect on the level of unemployment. This analysis introduces certain important institutional elements, notably the link with the state employment agency, and Pissarides discusses how the condition (c') of UI may be enforced by linking the payment of benefits to proof of contact with potential employers.

C. *Efficiency Wage and Dual Labor Market Theories*

Returning to the determination of wages, we consider in this section the alternative approach adopted in efficiency wage models. According to this approach, labor productivity increases with the wage paid: for example, because reduced supervision is necessary, or reduced turnover takes place, or on account of improved morale. Employers determine the profit-maximizing wage and there is no incentive for them to reduce this wage in the face of unemployment.

The policy consequences differ markedly with different versions of the efficiency wage model (see Joseph Stiglitz, 1986, who considers explicitly the effect of an increase in unemployment benefit). Where worker effort depends on the risk of being fired for shirking, and the cost of being fired is that the worker has to live on unemployment benefit, then the wage paid is equal to the benefit plus a premium which depends on the cost of effort and the probability of being monitored. In this case, an increase of \$1 in the unemployment compensation leads to \$1 increase in the efficiency wage, and this leads in turn to a fall in the level of employment (this may be intensified if account is taken of the financing of the benefits—see Carl Shapiro and Stiglitz 1984). On the other hand, an increase in benefits may increase employment if efficiency wages arise due to firms possessing imperfect information concerning the ability of workers. In this version, the quality-mix of applicants depends on the wages offered, it being assumed that workers' ability levels and reservation wages are correlated. Firms must hire randomly due to their imperfect information (institutional or social constraints are alternative explanations). Suppose that an increase in unemployment benefit reduces the search intensity of low productivity workers relative to that of workers of higher productivity. In this case the average quality of applicants at any offered wage will rise. Labor demand rises and unemployment falls. The effect is now reversed.

Setting the shirking/supervision cost story within a dual labor market model allows us to examine the effect of unemployment benefit on transitions to different types of employment. It has been argued that direct transitions between regular and marginal jobs are infrequent: "workers who lose primary-sector jobs appear to be very unlikely to accept stopgap jobs in the secondary sector" (Jeremy Bulow and Summers 1986, p. 404). To

secure regular employment, workers have to queue as unemployed. The cell in the transition matrix for movements from marginal to regular jobs is therefore empty. (We discussed this assumption in Section 1.) For efficiency wage reasons, employers in the primary sector pay a wage premium over that available in the secondary sector; and the equilibrium condition balances the return to being unemployed, with some probability of securing a preferred job, against the secondary sector wage foregone. If all those out of work receive unemployment compensation, then there is a rise in the wage in both sectors and a rise in "wait" unemployment: the higher unemployment benefit provides an incentive for workers in marginal jobs to quit in order to be considered for regular employment. These dual labor market models may be seen as capturing the difference between regular and marginal employment, although as we stressed earlier this distinction may be better seen as relating to jobs than to sectors.

But all workers do not receive unemployment benefit. Most importantly, the central feature of the shirking model is the threat of dismissal for industrial misconduct, which is relevant to the condition (a') for the receipt of UI. It seems likely that shirking would lead to a risk of disqualification; and we should note that employers have a strong incentive to report job loss as resulting from misconduct insofar as there is experience-rating or statutory redundancy payments, because this would reduce employer liability. In calculating the cost of shirking, the worker may therefore not reckon on receiving benefit in the event of dismissal for lack of effort. Atkinson (1990b) shows that taking account of this condition, together with allowing for benefit exhaustion, and the noncoverage of secondary sector workers by UI, may lead to quite different conclusions. A rise in the benefit level now makes employment in the primary sector more attractive (providing insurance against job termination) and hence reduces the equilibrium level of the primary sector wage and *increases* employment in the primary sector. It is true that workers may still be induced to leave secondary sector jobs to join the queue for primary sector jobs, but we have a rather different perspective on the role of UI.

In allowing for heterogeneity in employment, the dual labor market models represent a move towards the richer treatment of labor market states urged in Section 1. The state "not-in-the labor-force," and the possibility of people quitting unemployment to leave the labor force or to enter full-time training, has received relatively little attention.[29] As far as training is concerned, human capital and other theories are clearly relevant. Pissarides (1976) considers the impact of unemployment compensation on transitions to and from inactivity. Not surprisingly, the effect of a change in benefits on participation hinges on whether only active searchers receive unemployment benefits. If this is the case then a cut in benefits increases transitions from unemployment into inactivity as well as employment but if nonparticipants also receive unemployment compensation then the effect of a change in benefits is ambiguous since a rise in benefits increases the utility of nonparticipation. The analysis illustrates the importance of careful consideration of the definitions of "unemployment" and "inactivity." Other authors have drawn attention to the "entitlement effect" of UI which makes participation in paid work more attractive. As was identified by Milton Friedman in his Nobel Lecture, "the

[29] We do not refer here to the literature on retirement—see for example Diamond and James Mirrlees (1978) and Eytan Sheshinski (1978).

availability of unemployment insurance makes it more attractive to enter the labor force" (1977, p. 458). The transition from unemployment into government labor market programs, including full-time training, is considered in the search model presented by Weng Tat Hui and Pravin Trivedi (1986). A low ratio of benefit to training allowance produces an incentive to enter the training program, but if entry to the program is restricted to the long-term unemployed this produces a disincentive to exit from unemployment in the pre-eligibility period.

D. *Theoretical Treatment of Unemployment Compensation: A Summary*

Our emphasis in this section has been on the institutional features of unemployment compensation and the extent to which they affect the conclusions drawn with regard to its impact on different labor market transitions. Although individual elements have received attention in isolated studies, the great generality of research reaching conclusions about unemployment compensation has paid scant attention to the institutional details, and some elements have been almost totally ignored. This applies to the means-tested nature of UA and the implications of the family/household assessment, which are particularly likely to affect the decisions of couples. (The literature on decisions about hours of work has brought out the role played by the interdependence of budget constraints.)

The importance of the institutional aspects is a matter on which we would like to insist. It might be thought that they are of second-order significance, but the specification of the form of unemployment compensation may be critical to its economic impact. As we have attempted to show, the conclusions drawn about the effect of unemployment insurance may be reversed when account is taken of such aspects as the requirement for previous insured employment, of disqualification for voluntary quitting, or of the restricted coverage of UI. Any theoretical model has to abstract from reality, but in abstracting we should not lose sight of the essential features.

IV. *Empirical Evidence on Unemployment Compensation and Labor Market Transitions*

A. *Assessing the Impact of Unemployment Compensation*

Empirical modeling of the impact of unemployment compensation has in a number of respects shown more awareness of the institutional details stressed above, but it runs the same danger of skating over important features. The emphasis in empirical work has, like that in the theoretical literature, tended to be on the effects of changes in benefit levels rather than the different conditions for receipt of UI and UA that we summarized in Section 2. The typical study has been concerned with the sensitivity of exit from unemployment to the level of unemployment benefit or the ratio of benefits to earnings ("replacement rate").[30] The analysis is considerably complicated—and enriched—by the recognition that unemployment compensation is not a single variable and that coverage of the unemployed is not universal. Benefit payments vary considerably with individual characteristics and behavior, past and present, and are affected by the way in which the benefit system is administered. In this section we look critically at how unemployment compensation has been handled in empirical research.

[30] Replacement rates may be defined in a number of different ways—see Atkinson and Micklewright (1985, ch. 5).

The second theme running through the section concerns the need for a richer treatment of labor market states. Empirical research has concentrated on the total flows into and out of unemployment. To what extent does it matter in practice if we do distinguish between employment and inactivity? How far is there evidence about the *type* of job taken by the unemployed returning to work? We also need to consider carefully the different definitions of unemployment used in empirical research. If the unemployed are defined as benefit recipients, then exit may be to uncompensated unemployment. These considerations may be particularly significant when looking at the impact of unemployment compensation on the labor market transitions of women and it is important to point out that much of the available empirical evidence relates only to male workers, which is a serious limitation. One of the major features common to OECD labor markets has been the rise in the participation of married women, and this has undoubtedly affected the extent to which different labor market transitions may be influenced by government policy.[31]

There are several different types of empirical evidence on which one can draw in assessing the impact of unemployment benefit on labor market transitions: aggregate time-series, cross-section studies based on sample surveys or panel data on individuals, investigations based on administrative records, and experimental evidence. These different sources are sometimes seen in adversarial terms, with one group of authors making use of one type of evidence and a rival group espousing another. In our view, however, they should be seen as complementary. The variety of definitions of unemployment in available data is a good example why different sources may give us different results about the effects of unemployment benefits without there being any conflict or paradox involved. Data from administrative sources measuring registered unemployment (or weeks of benefit receipt) may indicate a different impact of unemployment compensation than data relating to unemployment defined as time in which job search was conducted.

A second reason for looking at various types of evidence can be found in the variety of different effects of unemployment benefits suggested by the theoretical analysis. Different types of data are needed to reveal these. The aggregate time-series approach provides a direct answer as to the effect of temporal variation in parameters of benefit systems on aggregate unemployment flows or totals. Aggregate time-series data have, for instance, been used by those attempting to assess the effect of the introduction of earnings-related benefit in the U.K. in 1966 (it was subsequently abolished in 1982), and of the large increases in the real value of benefits in Australia in 1972–74, both of which occurred at the same time as a sharp rise in unemployment. This approach, whether as a "reduced form" with no explicit model of the labor market (Dennis Maki and Zane Spindler 1975, and Herbert Grubel and Maki 1976), or whether as a set of fully-specified equations (Layard and Stephen Nickell 1986), has the advantage of capturing effects on both sides of the market. Unemployment benefit may affect the wage-setting behavior of firms, with no apparent direct effect on the duration of individual unemployment, and this would not be detected within a partial equilibrium search theory framework.

Although the aggregate time-series approach has attractions in terms of analysis of benefit effects on the demand side of

[31] It is worth pointing to the empirical research on hours of work, where evidence suggests that the labor supply responses of women to changes in transfers are rather different from those of men.

the labor market, it has a great weakness when it comes to the supply side. Aggregate time-series cannot allow for the diverse nature of the budget constraints facing individuals. As far as research on the effects of benefit levels is concerned, the typical practice is to consider the benefits received by a hypothetical "representative" worker, or the average benefit payments actually received by the unemployed, and compare one of these measures with the average earnings of the employed. This fails to allow for the fact that the ratio of income while unemployed to that received while in work can vary enormously across the population and in a manner that is not uniform across time (Daniel Hamermesh 1977; Atkinson and Micklewright 1985).

The distinction between UI and UA, and in particular the provisions relating to the treatment of family characteristics and income under the latter, are major causes of this diversity. The amounts received in UA depend, for example, on other sources of income and on the earnings of the spouse. If we restrict attention to those individuals receiving only UI, then even in countries with a single, nationwide, legislated ratio of UI to earnings there will still be variation in ratios of income in and out of work due to the operation of a maximum threshold on benefit. For example, it has been estimated that only 32 percent of the insured workforce in Denmark in 1984 would have received UI at the statutory rate of 90 percent of earnings had they been unemployed, the remainder being distributed across rates below this because of the operation of the maximum benefit rule (Jensen and Westergard-Nielsen 1989). The maximum benefit payable was fixed in nominal terms in Denmark during 1983–87, implying that this measure of the generosity of UI was declining in real value despite the statutory benefit-earnings ratio being constant. It is clearly difficult to pick a single series which represents the changes over time in the generosity of the unemployment compensation system. Finally, there remains the possibility that the parameters of the system of unemployment compensation, including the level and duration of benefit, and the system's administration may themselves be influenced by the state of the labor market. This will occur if higher unemployment is perceived as requiring a more generous benefit system (an example is the extended benefit program in the U.S.); unemployment and benefits may therefore be simultaneously determined at the aggregate level.

It is essential that the analysis should take account of the diversity of individual receipt of unemployment benefit. Most importantly, it should be recognized that hypothetical calculations based on a reading of the social security manuals are highly misleading. Micro-data from sample surveys or administrative records allow the individual variation in benefit receipt and its relation to earnings to be modeled, and this source of evidence has been extensively used, in particular in those studies motivated by search theory which have looked at the determinants of individuals' exit probabilities from unemployment.

At the same time, the difficulties of accurately modeling the benefit system at the individual level, and of interpreting the findings, should not be underestimated. It is a considerable undertaking to allow for the relevant contribution conditions and employment record for UI, and for the take-up of entitlement to UA. Survey data, such as the U.S. Current Population Survey or the U.K. Family Expenditure Survey, may attract the researcher due to their definition of unemployment, this not being restricted to benefit recipients. On the other hand they do not contain sufficient information to calculate accurately entitlement to

benefits payments.[32] Of particular concern is the need to allow for *changes* in the level of compensation over a spell of unemployment, such as a reduction in the ratio of UI to previous earnings, or exhaustion of entitlement. If unemployment compensation is not fixed over the spell, then the failure to allow for this when modeling unemployment duration represents a specification error. Making this allowance is much harder in structural models of unemployment duration which attempt to model the separate probabilities of job offer and acceptance. This is one reason why, in our view, reduced form models may provide results about the effects of benefits on exit probabilities which are more reliable. Reduced form models provide a much greater degree of flexibility which can be used to handle important institutional details of benefit systems.

A typical difficulty in modeling unemployment benefit is that benefits in payment at *one* point of an unemployment spell are recorded, but the full pattern of benefits over a spell is not observed. The information which is recorded may allow the researcher to do considerably better than purely hypothetical calculations, but the benefit models which can be constructed using such data are likely to be far from ideal (Atkinson and Micklewright 1985, ch. 6; Micklewright 1985). Access to administrative data recording the sequence of actual benefit payments throughout a spell represents a substantial advantage as far as the calculation of income out of work is concerned, although the absence from such data of those unemployed who are not claiming benefits must be balanced against this. Moreover, it is not just the income when unemployed which may need to be estimated; as our discussion of the aggregate time-series approach indicated, it is usual to specify the effects in terms of the ratio of benefits to earnings. When considering the incentive to return to work it is the unobserved wage offers that are relevant rather than the previous earnings which may be observed.[33]

The second difficulty with the use of survey data concerns the interpretation of the findings. We are concerned with the impact of variations in the unemployment compensation system, say the level or coverage of benefit. But how far is there exogenous variation in this variable?[34] The variation in individual benefit receipt that we have described may be explained by differences in individual characteristics which themselves need to be included as explanatory variables in the model in their own right. The past employment record may be a determinant of both the benefit entitlement and the willingness of employers to take the person on. Such characteristics may be unobserved: for example, a spirit of independence may render people more likely to return to work and less likely to claim benefits. In this case, there is a risk that unemployment benefit variables may partly proxy determinants of transition probabilities for which the re-

[32] The problems of calculating UI entitlements using CPS data in the U.S. are described by Clark and Summers (1982); the problems with using the FES data in the U.K. are set out in Atkinson and Micklewright (1985). The issues involved in calculating benefit variables are discussed further by Mark Gritz and Thomas MaCurdy (1989), who distinguish between a calculation based on the individual work history and one where benefit is assigned on the basis of a classification of workers by type and the average benefits awarded to this type by state law. The aim of the latter is to isolate the differences due to policy variation (see below).

[33] Nickell (1979a, 1979b) and Atkinson et al. (1984) estimate earnings equations for the employed in order to predict earnings when in work for the unemployed samples they use to model unemployment duration. In neither study, however, were these earnings equations adjusted for any sample-selection bias arising from correlation between unobservables explaining unemployment and earnings.

[34] These points are made in a more general context of modeling tax and transfer programs by Robert Moffit (1989).

searcher has been unable to control. We may be confounding the effect of policy changes with that of the unobserved personal characteristics.

Exogenous variation may be present if there is geographical variation in benefit parameters (providing that geographical variables do not also enter the explanation of behavior) as with unemployment insurance in the U.S. It may be present where the sample is drawn from a number of years spanning a policy change in unemployment compensation programs. We then have a mixture of cross-section and time-series evidence. There may also be exogenous random variation caused by administrative error and discretion.[35]

The use of micro-data is further subject to the major reservation that the modeling of inflow or outflow probabilities is invariably based on the assumption that the individuals' experiences of unemployment are independent. While this may be true for the sample used in estimation, it may not be the case for the population from which the sample is drawn. Suppose for example that ceteris paribus we observe that persons with higher benefits exit unemployment more slowly. This does not necessarily mean that aggregate unemployment is higher since the refusal of jobs by one group may lead to the work being offered to others. In other words it is the composition of unemployment which is altered. Thus we can think of there being an aggregation problem involved with this use of micro-data.[36] This in turn may be seen as part of a wider criticism that the approach lacks a full general equilibirum treatment of the labor market—of the kind discussed in Section 3. The effect on the wages offered by employers may be at least as important as that on reservation wages (Harald Lang 1985). Eligibility for UI is in itself endogenous, since people choose jobs in the covered sector or to work for a sufficient period to qualify.

In the review of particular studies which follows, we restrict ourselves to the modeling of the effect of unemployment compensation on labor market transitions out of or into unemployment. This means that we do not consider evidence on the effects of benefits on wages, and that we tend to concentrate on studies using micro-data, since these typically allow unemployment benefit to be treated in more depth. We do not consider the transition from not-in-the-labor-force to employment, nor vice versa.[37] It should also be stressed that we are concerned only with those problems of estimating models which are relevant to the treatment of unemployment compensation. We cannot consider each study in detail.

B. *Exit from Unemployment and Levels of Unemployment Compensation*

The aspect of unemployment compensation that has received most attention is the impact of benefit levels on the transitions out of unemployment. One reason for the focus on outflows from unemployment may be their relative importance in explaining changes in overall unemployment levels. Rises in unemployment in Europe have been associated particularly with falls in outflows and lengthening durations of unemployment

[35] Jean-Pierre Florens et al. (1990) note that in France the variation of unemployment compensation over a spell cannot be formalized by a deterministic equation since the benefit authorities have some flexibility in the application of the rules.

[36] A useful analogy is with the literature on targeted employment subsidies which has emphasized that subsidies tend to improve some individuals' employment prospects at the expense of others, the latter suffering from what are known as "displacement" effects.

[37] Thus we do not consider the influence of benefits on the entry of single parents into employment (John Ermisch and Robert Wright 1989, Jenkins 1990).

(Michael Burda 1988). In the U.K. almost all changes in registered unemployment in the years 1967–1983 can be attributed to changes in outflows, a period when unemployment varied between under 3 percent to nearly 16 percent (Pissarides 1986). Over a similar period in the U.S., 1968–82, the effect of changes in outflows also dominated but inflows did play an important role in determining the overall level of unemployment (Hal Sider 1985).[38] This may be a reason why North American research on inflows is more developed than in Europe.

Several observers have concluded that firm evidence exists concerning the effect of variations in levels of unemployment compensation on the outflow from unemployment. Reviewing micro-data studies in the U.S. Sheldon Danziger, Robert Haveman, and Robert Plotnick (1981) find a positive relationship between unemployment insurance and duration of unemployment which "appears robust" (p. 992). In the U.K., considerable attention has been paid to the conclusion reached by Tony Lancaster and Nickell (1980) based on their separate work—also using micro-data—that "the effect of benefits is a rather firmly established parameter" (p. 151).

A number of points about these conclusions can be made. Firstly, the estimated effects reported in these U.S. and U.K. studies are rather modest. Danziger et al point to the work of Moffitt and Walter Nicholson (1982) as the study they consider to be the most reliable; this indicates that a rise in the replacement ratio (the ratio of benefits to earnings in work) of 10 percentage points would increase the average duration of unemployment by about one week. Lancaster and Nickell concluded that the elasticity of unemployment duration with respect to benefits was about 0.6. (This would mean that a 10 percent rise in benefits would be associated with a rise of one week if the duration were 17 weeks.) These estimates suggest that only quite large cuts in benefits could raise outflows sufficiently to reduce unemployment by a substantial amount.

Secondly, the microdata results from the U.S. and the U.K. are not as robust as has been claimed, an aspect which has been emphasized by us elsewhere (Atkinson et al. 1984; Atkinson and Micklewright 1985). One aspect that we highlighted was the sensitivity of results to assumptions made about the benefit system and this echoes our concern, expressed earlier in this paper, about the treatment of unemployment compensation in theoretical models. In our own analysis of U.K. unemployment duration, we found that the earlier results of Lancaster and Nickell could be reproduced, using a different data set, if the benefit variable were calculated hypothetically for each person under the assumption of complete entitlement and take-up. However, when we based our calculations of the benefit variable (and its changes over the spell of unemployment) on the amounts reported as being received, its effect ceased to be significantly different from zero. Another aspect we considered was the role of the definition of unemployment. The restriction of analysis in the U.S. to that minority of the unemployed who receive unemployment insurance has been emphasized by Stephen Hills (1982) who considered the sensitivity of results in the well-known work of Ronald Ehrenberg and Ronald Oaxaca (1976) to the treatment of those unemployed who do not file for benefits. He concludes that the findings regarding the replacement rate are highly sensitive.

Recent research has demonstrated more awareness of institutional details of unemployment compensation systems

[38] For a different view of the importance of inflows see Michael Darby, John Haltiwanger, and Mark Plant (1986).

and the actual pattern of benefit receipt that they generate, including the variation of benefit payments over a spell of unemployment. Coupled with the use of data sets which accurately measure from administrative records the precise benefit amounts paid out to unemployed people, this has led to more reliable estimates of the effects of benefits, although the use of administrative sources means that these results do not refer to transitions out of unemployment defined on a job search criterion. In the U.K., Wiji Narendranathan, Nickell, and Stern (1985) found a well-defined but very small benefit elasticity of duration (around 0.3) using data drawn from the benefit computers of the Department of Health and Social Security. In the U.S., Moffitt (1985), Meyer (1989, 1990), and Katz and Meyer (1990) have used the Continuous Wage and Benefit History (CWBH) data.[39] Moffitt reports a benefit elasticity of about 0.4. Meyer indicates that his estimate is "toward the high end of the distribution of recent estimates" (1990, p. 780): a 10 percentage point rise in the replacement rate would be associated with an increase of around 1½ weeks in duration. Similarly, a rather higher estimate is found using CWBH data by Meyer (1989) who compares the spell lengths of people beginning UI receipt just before and after benefit increases, in an attempt to identify the exogenous effect of benefit changes. The estimated elasticity with respect to the benefit amount is around 0.8–1.0.

The third point which needs to be emphasized is that evidence of benefit effects on unemployment duration from the U.S. and from Britain should not be taken as necessarily representative of those in other countries. In Section 2 we emphasized that unemployment compensation systems differ considerably across countries. This implies that a change in the level of benefits may not have the same effect. For example, we would expect benefit increases to have the least effect in countries where the administration of the unemployment compensation, including the monitoring of job search, is very tight. Evidence from the rest of the OECD on benefit effects is less voluminous, although increasing rapidly. As with the U.S. and the U.K., the evidence does not suggest that the effects of benefits on transitions out of unemployment (however defined) are large or measured with precision.[40] The reason why the benefit effect may be modest is illustrated by the structural job search model estimated using data from the Netherlands Socio-Economic Panel (Gerard van den Berg 1990b). The estimates suggest that in most cases the probability of accepting a job offer is close to unity. A reduction in benefits reduces reservation wages, but these tend to be located at the left tail of the distribution

[39] It should be noted that the durations recorded in the CWBH, as used for example by Meyer (1989), refer to the total period of receipt of UI during a year starting when the person files for UI benefits, thus linking multiple spells.

[40] Florens et al. (1990) find benefit effects with a large French microdata set based on administrative records which "remain ambiguous and very sensitive to the model used as well as to the data under consideration" (p. 342). Analyzing unemployment spells recorded in the West German Social Economic Panel, Eckhard Wurzel (1988) finds a negative but insignificant effect of benefits on unemployment duration. Using the same source, Reinhard Hujer and Hilmar Schneider (1989) do not enter the level of benefits but find that the switch from UI to UA appears to result in a significant fall in the exit probability, despite this change resulting in a lower benefit level. John Ham and Samuel Rea (1987) find no significant benefit level effect with Canadian microdata (but note the lack of geographical variation in benefit rules). In Australia (one of the very few OECD countries with UA but no UI), Trivedi and Cesari Kapuscinski (1985) report from their time-series work on outflows, "consistent and robust evidence" (p. 181) of the effect of benefits on the probability of continuing in unemployment, but the effect they detect is again rather slight, a A$10 a week increase in unemployment benefit being estimated to increase spell lengths by 1.5 to 3 weeks.

of wage offers, and for typical forms of the distribution the transition probability is not greatly affected. In terms of Figure 1, we are on a relatively horizontal piece of the curve. (The analysis of van den Berg distinguishes return to employment from exit from the labor force—see below.)

The fourth point we would like to make about the estimated effect of the level of unemployment compensation on the duration of unemployment concerns the variation of the impact with the length of time unemployed and with personal characteristics, notably age. As far as the former is concerned, although there has been extensive discussion of duration dependence as such, there has been less attention paid to how the derivative of the transition probability with respect to unemployment benefits may change over time. Nickell (1979a and 1979b) in his study of unemployment duration in Britain allowed the coefficient on the replacement rate variable to vary with duration, and with his preferred version of the estimated equation finds that after 20 weeks current benefits had no significant effect on the probability to return to work.[41] A more detailed U.K. data set indicates a significant benefit effect persisting after six months only for teenagers (Narendranathan, Nickell, and Stern 1985). This sort of evidence has important implications for policy suggesting, in the case of the U.K., that income support for most of the long-term unemployed may be increased to a higher level without concern for incentives.[42]

[41] Juha Kettunen (1990) finds for Finland that the effect of benefits on the probability of leaving unemployment is negative for the first three months and then positive. He explains this in terms of the administrative provisions applied after three months to disqualify from benefits those refusing job offers.

[42] If the evidence points the other way, as is suggested for Holland by van den Berg (1990a) using a nonstationary structural model, the implications will of course be different (he finds a markedly higher benefit effect after two years).

C. *Outflows from Unemployment to Different Labor Market States*

The bulk of work on the outflow from unemployment has modeled the *total* outflow to other labor market states and not the flow which may be of most interest to policy makers—that from unemployment to employment (this comment for example applies to all the U.K. studies referred to above). Thus even if we were to have a robust estimate of the effect of benefits on the total outflow probability for a given country, we might well not be able to tell by how much a cut in benefits would actually raise employment as opposed to increasing withdrawals from the labor force and increasing the rate of entry into government training schemes. The effect of distinguishing the exit state from unemployment is demonstrated by work with U.K. microdata in which a single-risk model, which did not distinguish the different transitions out of registered unemployment, understated the effect of unemployment benefits on transitions to employment (Narandranathan and Mark Stewart 1989, 1990): the estimated effect of UI in the first quarter is increased by about 15 percent, although it remains modest in size and is insignificant after two quarters. In France, there is evidence for a sample of UI claimants (both men and women) about exit, distinguishing separately employment, training, and not-in-the-labor-force (Xavier Joutard 1990). Estimates of the effect of benefit level and benefit duration on the exit probability show that there is a significantly different pattern for different transitions. The most significant negative effects are those of benefit duration on the transition from unemployment to employment, of benefit level on the transition to training, and of both variables on exit to inactivity.

In theory one might expect unemploy-

ment benefit to deter all forms of exit. The relevant ratio is now, not that between benefit and income in employment, but that between benefit and income in training or out of the labor force. If for example the benefit level falls relative to student grants, this may make full-time education more attractive. The same may apply if the benefit falls relative to payments made to trainees on government schemes. In the U.K., for example, the Government in announcing a new training program for the long-term unemployed, stated that a premium of at least £10 would be paid over weekly unemployment benefit in order to provide an incentive to join the scheme (Department of Employment 1988a). On the other hand, comparatively little is known about the determinants of the transition from unemployment to training and the impact of such a premium.[43]

As far as the transition to inactivity is concerned, in the U.S. a number of authors have attempted to distinguish the effect of unemployment compensation on transitions to inactivity from that on transitions to employment, with mixed results. Clark and Summers (1982) found the effect on both transitions to be insignificant. In contrast, Barron and Mellow (1981) found that the probability of leaving unemployment for both employment and for inactivity was lower for UI recipients.

As we have seen in Section 3, unemployment compensation may affect the *kind* of employment taken up by those leaving unemployment. The existence of unemployment insurance may make covered employment more attractive. Workers have to contribute, but the actuarial return to these contributions may well exceed this cost (for example, where part is borne by the state or by the employer). The existence of UI may therefore provide an incentive for workers to enter regular employment and reduce the importance of the black economy. The influence of unemployment compensation on whether the unemployed exit to regular or marginal employment is clearly hard to detect empirically, principally because of problems in defining in any given data set which post-unemployment jobs are "regular" and which are "marginal." One study which overcomes this difficulty is that of the French labor market, where jobs may be distinguished according to the type of contract (Louis-André Gérard-Varet et al. 1990, and Joutard 1990). A follow-up survey of unemployed in the Provence-Alpes-Côte-d'Azur region in 1985 distinguished between those entering regular jobs and those entering "precarious" jobs, the latter being defined as fixed-term contracts, seasonal work, or temporary work. The results showed that a variable indicating receipt of benefit had a highly significant negative association with transitions to precarious employment but that the effect was less significant (men) or insignificant (women) for regular jobs.[44]

The distinction may also be made between unemployment ending in recall to the previous employer and that ending through entry to a new job. Two countries where we mentioned temporary layoff unemployment to be important are Denmark and the U.S. Research on the former using samples separated by sex and age-group has shown no systematic pattern to the differences in the esti-

[43] The study from Sweden by Per-Anders Edin (1989) is unusual in that it models the separate flows from unemployment to public labor programs as well as to employment and to inactivity. Problems with missing data prevent the use of information on unemployment compensation, but his results with respect to other variables confirm that it is important to distinguish different destinations when examining the probability of exit from unemployment.

[44] The study by Groot (1990) for the Netherlands distinguishes between permanent and temporary jobs. Estimates of a competing risks model show no significant effect of benefits on either transition.

mated effects of benefits on new job exit and recall (Jensen and Westergard-Nielsen 1989). In the U.S., one study has shown the level of UI among claimants in Missouri to have no significant effect in a single-risk model but to have a significantly negative effect on the probability of finding a new job when allowance is made for the distinction between new job and recall (Katz and Meyer 1988).[45] This is an area of research where more work is needed in those countries in which layoff unemployment is important.

D. *Entry into Unemployment*

Entry *into* unemployment may be affected by unemployment compensation in a variety of ways; for the moment we concentrate on the effects of the level of benefit and method of financing. The latter works via the demand side of the labor market while the former works through quit behavior on the supply side. An upper bound on the effect via quits is given by the proportion of entrants to unemployment who leave their jobs voluntarily. Evidence suggests that in the U.K. rather more persons quit than in the U.S. but in neither country do such people form the majority of the unemployed (Johnson and Layard 1986).

Outside the U.S., empirical evidence on the quantitative significance of the effect of unemployment compensation levels on the entry to unemployment is rather limited. Studies using time-series data on flows in the U.K. and in Australia give qualitatively similar results (Nickell 1982, and Trivedi and Kapuscinski 1985): no strong evidence that benefits have much effect on inflows. Similarly, using the same micro-data as described earlier when considering outflows, Stern (1986) detects no effect of benefits on the probability that men in the U.K. reenter registered unemployment within a given period of an earlier spell. The use of the same data-set to look at both inflows and outflows is clearly very useful given the difficulties of comparing different studies. All three studies just mentioned appear to suggest that benefits affect inflows into unemployment less than outflows.

At the same time, we need to recognize again that it is typically the total inflows from all labor market states that are being modeled, and not specifically the flow from employment to unemployment. The U.S. literature on inflows provides several examples of studies where the source of inflow has been distinguished, and gives a rather different picture of the effect of unemployment compensation. Evidence for married women in the U.S. suggests that there is a significant entitlement effect of UI encouraging entry into the labor force (Hamermesh 1979), although this could be at the expense of the transition from inactivity into employment (Clark and Summers 1979).

In some U.S. work, the bulk of the effect found of benefits on inflows arises on account of the subsample who had entered unemployment through layoff (Clark and Summers 1982), and considerable attention has been paid in the U.S. to the incentives provided to employers and employees to negotiate contracts under which fluctuations in demand lead to unemployment (the theoretical literature was reviewed in Section 3). It has been claimed that up to one half of U.S. layoff unemployment is due to unemployment benefit (Feldstein 1978). The

[45] The authors counsel some caution when interpreting their results, pointing to the peculiar nature of the variation in the UI payments in their sample and to the fact that they find that UI has a significantly positive impact on the recall probability. Theory would suggest no (supply-side) impact at all if those persons who are recalled do not conduct job search. An insignificant effect of the replacement rate on the probability of leaving temporary layoff unemployment is indeed found by Topel (1983) using CPS data.

different effects of unemployment compensation on temporary layoffs, permanent separations, and quits have been studied in several papers by Topel (1983, 1984, 1985); imputed UI has little effect on quit or permanent layoff probabilities but the UI system is found to have a strongly significant impact on the probability of temporary layoff.[46] Topel concludes that if the subsidy to layoff were to be eliminated through improved experience-rating, the unemployment rate in his sample would fall by over one percentage point.

The U.S. results indicate that UI may indeed have important effects on inflows but that the impact may be from the *demand* side and not the supply side of the market. The fact that voluntary quitting entails the risk of disqualification from unemployment benefits may be an important reason for the lack of supply side effects on inflows in all the countries we have referred to.[47] It is noteworthy that layoff unemployment is much more important in the U.S., where the implicit subsidy to temporary layoff unemployment is in fact less than in other OECD countries, where (apart from Sweden) there is little or no experience-rating of UI. Differences in labor law or institutions may not provide an explanation (Fitzroy and Hart 1985). Whatever the reason for the lower amount of temporary layoff unemployment in Europe, it may be that the kinds of concern voiced by Feldstein and Topel about the adverse effects of UI may be of lesser significance in other countries.

[46] The results we refer to come from Topel's 1985 paper in which the effect of the UI system on temporary layoffs is measured by a calculated variable indicating the degree of government subsidy to layoffs (brought about by incomplete experience rating) in the relevant State for each individual in his data set.

[47] We should, however, also note the difficulties in adequately imputing potential benefits when estimating a model of quitting probability, even if we ignore the possibility of disqualification.

E. *Other Parameters of Unemployment Compensation Systems*

To this point, when looking at the supply-side of the market, we have only considered the effect of variation in levels of unemployment compensation. However, there is much more to the operation of a benefit system than the level of benefit, as we have emphasized. Governments may be able to manipulate the flows to and from unemployment by changing other parameters of the system.

The *duration of benefits* is one such parameter. Aggregate time-series data have been used in Sweden to try and assess the extensions of UI duration in Sweden in 1968 and 1974; no effect could be detected on the quarterly outflow rate from unemployment (Björklund 1978). On the other hand, microdata in the U.S. indicate that the proportion remaining unemployed a further week falls sharply at the moment of benefit exhaustion. Plotting the raw data in terms of exit rates by duration indicates that there is a "spike" around the time of benefit exhaustion (Marston 1975; Moffitt 1985; Ham and Rea 1987; Katz and Meyer 1990). Katz and Meyer, using data from the Michigan Panel Study of Income Dynamics, note a sharp rise in the outflow rate for UI recipients recorded at 26 and 39 weeks, corresponding to likely periods of UI exhaustion, this not occurring for nonrecipients. In this context, the distinction between duration of *compensated* unemployment and *total* unemployment is important: Gritz and MaCurdy (1989) compare the findings for a sample of young unemployed in the U.S., the spikes being more evident in the former case.

Econometric estimates by Moffitt and Nicholson (1982) and Moffitt (1985) suggest that an increase in potential UI duration of 1 week increases the mean length of time unemployed by about 0.10–0.15

weeks. The estimates of Katz and Meyer (1990) suggest that such an increase in potential UI duration has an effect of up to 0.2 weeks (although the relevant coefficients are not very well determined), and a rather larger effect is found in Canada by Ham and Rea (1987). Notably, Katz and Meyer conclude that changes in UI duration have greater effects than changes in UI levels, and their simulations show a given UI expenditure cut achieved via reducing the length of entitlement having twice the effect of one coming via a cut in benefit levels.[48] For the young unemployed in the U.S., Gritz and MaCurdy (1989) find that UI recipients tend to experience a longer spell of non-employment, and that this is largely due to the weeks of eligibility, rather than the weekly benefit amount. The predicted effects of a 1-week rise in the period of eligibility is in the range of 0–1 week increase in insured unemployment found in other studies.[49]

It should be noted that studies of the effect of the length of UI entitlement are not necessarily free of the problems of benefit imputation which occur in studies of benefit level effects. Even when data on benefit duration is drawn from administrative sources, as with the Combined Wage and Benefit History data in the U.S. used by Katz and Meyer, there remains the issue of duration of benefit which is *perceived* by the unemployed individual. At what stage in a spell is a claimant informed about any extended benefit entitlement? One striking result from the Katz and Meyer study is that the probability of a spell ending is markedly higher in a week when a claimant might reasonably have expected UI entitlement to have ended, had it not been extended. The exit probability in that one week is estimated to be higher by an amount which is more than the total increase during the last 13 weeks of UI entitlement (13 weeks being the typical length of UI extension). The authors note that this could be a demand side effect, employers carrying out preplanned recalls of workers on temporary layoff at the time of UI exhaustion originally anticipated. Alternatively, it is suggested that the result reflects a failure to claim extended benefits, due, for example, to claimants managing to have arranged the start of a new job to coincide with the exhaustion of normal UI entitlement. (It is also possible that there is incomplete take-up among those continuing as unemployed, perhaps because the existence of the entitlement is not made clear.)

The effective period for which benefit is paid depends also on the way in which the benefit is *administered.* A person claiming unemployment compensation has typically to satisfy various conditions concerning the circumstances of entry to unemployment and to search for new work. Voluntary quitting without good cause, failure to be available for work and the refusal of suitable job offers may all lead to a suspension or reduction of benefit payments or even complete disqualification. Policy makers wishing to increase incentives may find a tightening of administration of benefits may be an easier step than cutting their level. Selective measures affecting only the "less deserving" may be more politically acceptable than across the board cuts in compensation affecting all the unemployed (Atkinson 1990a).

A varying degree of severity of administration may result in different benefit

[48] Interestingly, the results in Katz and Meyer (1988) and Ham and Rea (1987) suggest a similar effect of benefit period entitlement on both recall and new job probabilities. This is surprising since one would expect the mechanisms at work to be rather different.

[49] Gritz and MaCurdy (1989) treat UI recipiency as endogenous, finding that it is significantly affected by benefit amount (men) and weeks of eligibility (women).

level (or duration) elasticities across countries. Changes in administration over time may of course also affect transitions to and from unemployment with benefit levels held constant. It is useful to distinguish the treatment of an initial claim for benefit, which might be expected to affect especially the inflows to unemployment, and the ongoing monitoring of the claimant which will influence the outflow as well. As far as the latter is concerned, Burtless has argued that "compared with government employment services in Europe, the U.S. Employment Service is relatively ineffective in aiding and monitoring the search for jobs" (1987, p. 149). As far as the former is concerned, legislation concerning initial claims to UI toughened in much of the U.S. during the late 1970s. By January 1983, forty-four states disqualified those who quit voluntarily "without just cause" for the full period of their claim (Gary Solon 1984). That this legislation does not go unused is illustrated by the fact that before this, in 1974, nearly 18 percent of all UI claims ruled eligible on contribution grounds in California were disallowed because of voluntary quitting (Clair Vickery 1979). Pooling state-level data for 1978–80, Solon fails to find any effect on quit rates in manufacturing of changes in UI laws relating to the treatment of quits. Of course, benefit authorities may alter the severity with which they administer claims without any change in the law.

We have noted earlier that some 8–10 percent of claims to UI in Britain are disqualified for voluntary quitting and there are in addition those who do not claim since they know they would be disqualified. Changes in such figures over time have led some commentators to argue that the administration of unemployment compensation in the U.K. has become much less severe and to suggest this as a contributory factor in the rise in unemployment since the late 1960s (Layard 1986).[50] However, time-series on disqualifications are hard to interpret. A fall in disqualification is entirely consistent with a decreased tendency to "malinger" as well as the alternative of a more relaxed administration. Where the figures refer to proportions of stock or inflow who are disqualified, it is clearly important to take account of shifts in other factors resulting in unemployment entry, such as a rise in redundancies. There is also the question of the direction of causation; increased leniency, particularly in the dealing with ongoing claims, could be a response to rising unemployment, rather than a cause of it. We need also to distinguish the changes in the number of actual disqualifications from changes in a credible threat of it occurring. This has certainly increased in recent years in the U.K. where a number of steps have been taken to tighten monitoring of benefit claims and job search (Atkinson and Micklewright 1989). In France too, there has been increased surveillance of the long-term unemployed (OECD 1987, p. 131).

In our view, little can be read into time-series of disqualification statistics as they stand. For this reason, note needs to be taken of the small amount of more concrete evidence. An experiment in the U.K. in 1980, in which half of a sample of UI recipients who had been claiming for three months were subjected to review, including an interview, showed that the expected post-review spell duration of the experimental group was reduced by an average of some 3.9 weeks compared with the control group (Geoffrey Royston 1983 and 1984). However, the distinction between different types of exit is again important. The effect of

[50] Also cited is the separation in the 1970s of benefit payment offices from the employment service and the ending in the 1980s of the requirement of the unemployed to register with the latter.

claim monitoring may be to increase the transition rate out of registered unemployment but not necessarily into employment. While some claimants may be stirred into increasing their search activity and hence their chances of reemployment, others may simply drop out of the labor force. Note too that claim monitoring may not only have a disciplinary purpose but may be intended to improve the information available to a job searcher. Increases in transition rates to employment may stem from either influence.

The effect of claim monitoring on transitions to employment may in particular be towards marginal jobs, these being the jobs where vacancies are typically more plentiful, and administrative pressures may be in this direction. For example, in April 1989 the Australian government announced that benefit claimants would be required to seek any casual or temporary work within their capacity. (Previously, a claimant could restrict his search to jobs within his usual occupation for six weeks.) Similarly, the effect of regulations on quitting on inflows may be to reduce transitions into registered unemployment but some persons may still quit into unemployment more widely defined.

If the administration of benefit could be called the "stick" approach to encouraging transitions out of unemployment, then the offering to the unemployed of a financial bonus on securing employment represents the "carrot." In Australia, this policy has been used for the long-term unemployed, who since February 1989 have received A$100 on securing a job. Experimental evidence of the effect of reemployment bonuses comes from the U.S. where there have been trials in several states. The Illinois experiment appears to have had substantial effects, the $500 bonus paid to new claimants obtaining a job within eleven weeks (and holding it for four months) having led to an average one week reduction in duration for the experimental group (the average including those who refused to participate and those who did not claim or qualify for the bonus) and a net saving in UI expenditure (Stephen Woodbury and Robert Spiegelman 1987). The probability of reemployment for the experimental group has been estimated to have been some 14 percent higher during the qualifying eleven-week period (Meyer 1988).

Reemployment bonuses are obviously intended to influence the outflow from unemployment to employment but their impact may be more widespread. In a scheme such as that in Illinois, where qualification for the bonus was immediate on entry to unemployment, the inflow to unemployment could be expected to increase. Firstly, workers intending to change jobs directly from one employer to another would have an incentive to register briefly as unemployed in between jobs. Secondly, a bonus program that pays people returning to their last employer would provide a strong encouragement to temporary layoffs. Where eligibility for a reemployment bonus is dependent on having been unemployed for a certain length of time, then this could be expected to have a negative effect on the reemployment probability during the qualifying period. In the case of the Australian program where the bonus is modest and the qualifying period long, this effect may be rather slight. In the New Jersey experiment where the initial average bonus was in excess of $1,500 and the qualifying period only seven weeks (Meyer 1988), a very strong disincentive could be expected.[51]

[51] This illustrates how experimental data, while offering a solution to certain of the problems of aggregate time-series and microdata, have shortcomings of their own. The effects of a permanent program are likely to be different from those of the experiment.

F. *Participation of Partners of the Unemployed*

The final consequence of unemployment compensation we review is that on the employment of the family of a person claiming benefits. The text book treatment emphasizes the "added worker" effect that unemployment itself may have on family labor supply. The impact of the system of unemployment benefit is not made clear. The implications of the benefit system on the behavior of other family members depend on the design of the unemployment compensation scheme. If benefits are paid on a wholly individual basis, then there is purely an income effect on the decisions of others. If benefit receipt is means-tested on family income, as with UA, there may be a marginal tax rate of 100 percent operating over a range of earnings of other family members. An intermediate situation is where part of the unemployment benefit—a spouse's addition—is conditional on the employment status of the spouse. In this latter situation, there is a notch in the budget constraint faced by the wife, and once this is passed the loss of benefit operates like a fixed cost of working.

Concern has been expressed about this disincentive aspect on account of the observed lower labor force participation of the wives of the unemployed. In the U.K. it has been noted that the participation rates of the wives of unemployed men are substantially lower than those of other married women (Clive Smee and Stern 1978, and Wood 1982). Moreover, Andrew Dilnot and Michael Kell (1987) have pointed to the higher participation of wives where the husband is in receipt of unemployment insurance (where there is only the notch) than for those receiving the means-tested benefit (with 100 percent marginal tax rate). In the United States, couples with the husband unemployed (in March 1980) had a similar participation rate for the wife to that where the husband was employed, but the wives' unemployment rate was nearly four times as high (OECD 1982, Table 9). In West Germany, in 1987 the proportion of wives in employment was 50 percent where the husband was employed, but only 30 percent where the husband was unemployed (Karl Hinrichs 1990).

There are a number of possible explanations for these patterns, including the fact that spouses face similar labor market conditions. Using different data sets for the U.K., Jaime Garcia (1985, 1989) and Kell and Jane Wright (1990) attempt to isolate the disincentive effect by estimating models of labor supply for wives of unemployed men, taking into account the effect of family means-testing on the budget constraint. Garcia concludes that a reform which extended UI to unemployed men in receipt of means-tested UA would raise the overall participation rate of the wives in his sample of male unemployed by nearly eight percent points (1989, p. 179). This represents a substantial impact, although Garcia notes that it implies that the disincentive effect of means-testing accounts for only a quarter of the shortfall in the participation rate of such women compared to that for all married women.

The results from the static models of Garcia and of Kell and Jane Wright are important contributions in an area where little is known. At the same time, we need to recognize that the disincentive posed for a wife by her husband's UA receipt is not permanent, lasting only as long as he stays unemployed and continues to receive assistance. In choosing her labor supply, a married woman may need to form an expectation as to how long her husband is likely to remain unemployed; if the labor market is slack she may not be able to easily reenter employment at a later date if she quits work. The disincentive effect on wives' work

may therefore vary with the state of the labor market and, to the extent that duration dependence in reemployment probabilities exists, with the length of time her husband has been unemployed. (Susan Moylan, Millar, and Robert Davies 1984, provide some descriptive evidence of labor supply changes from panel data that is suggestive of the latter.)

G. *Conclusions*

Our review began with the effect of unemployment benefit levels, or replacement rates, on the probability of exit from (and entry to) unemployment. This has been the principal focus of much of the literature, but we concluded that the findings are far from robust. One has to look carefully to find significant replacement rate coefficients, and their size is typically small. There is evidence that benefits may influence temporary layoff in the U.S. but with the effect coming from the demand side rather than the supply side.

The main thrust of our argument has however been that this treatment is unsatisfactory, for three main reasons:

(i) in focusing on benefit levels, it ignores other dimensions of unemployment compensation, whose effects may be more important. The influence of the duration of insurance benefit appears to stand out more evidently from North American data, although again the size of the effect is relatively modest. Too little is known about the impact of means-tested unemployment assistance on the decisions of other family members.

(ii) it takes too simplistic a view of the way in which unemployment benefit works in the real world. The administrative constraints, restricting initial entitlement, or disqualifying claimants for job refusal or failure to carry out job search, may be at least as important.

(iii) exit from unemployment may have quite different consequences depending on the destination. Little is known about the effect of unemployment benefit on people leaving the labor force or about their taking up marginal jobs.

V. *Conclusions for Research and for Policy*

Our principal argument in this paper has been that it is essential in the analysis of unemployment compensation to (a) distinguish different labor market states and (b) treat the institutional features of different forms of unemployment benefit. We are not claiming that these observations are original, and in the course of our review we have identified a number of important contributions that have preceded us. At the same time, there remains a great deal to be done at both the theoretical and the empirical level.

In terms of theory, a number of the building blocks exist. What is needed is that they should be brought together—ideally in a model which allows for a full range of labor market states. The theoretical treatment needs to allow for the duration and time structure of unemployment insurance, the eligibility conditions in terms of past employment record, the possible disqualification of the unemployed from benefit, and the implications for labor supply decisions of the family means-test for unemployment assistance. On the empirical side, we have found that, despite the large literature, there is relatively little evidence concerning several potentially important effects of unemployment compensation on labor market transitions. More research is needed on movements into and out of the labor force, and on the quality of employment which people enter.

Moreover, it should be emphasized that the evidence we have assembled is drawn from a variety of OECD countries, with the United States numerically the best represented, and that it may be dangerous to extrapolate the findings from

one country to another. One must take account of the many differences between unemployment compensation systems on different sides of the Atlantic, to say nothing of the variation within Europe. We have emphasized the distinction between unemployment insurance and unemployment assistance, the differences in administration of benefit conditions, the relation with the public employment service, and other factors. In arguing for a richer view of both the labor market and of unemployment compensation, we have also been arguing for greater care in making international comparisons. Empirical evidence has to be sought in the context to which it is to be applied.

As far as policy is concerned, unemployment benefit has not had a good press in recent years, with stress being placed on its negative effects on employment and labor market operation. Our review of the evidence leads us to conclude that there may be adverse effects on the incentive for the unemployed to leave unemployment but that these are typically found to be small and that there is little ground for believing that much voluntary quitting is induced by the unemployment insurance system (although there may be a significant impact on employer behavior in countries where temporary layoffs are common). Moreover, the richer view of the relationship between unemployment compensation and the labor market that we have urged in this paper allows us to identify some of the ways in which it may have a positive, rather than a negative, impact. This applies particularly to unemployment insurance, as opposed to unemployment assistance. Unemployment insurance may have positive effects in encouraging labor force participation—the effect identified by Friedman in his Nobel Lecture—and favoring regular rather than marginal employment. Unemployment insurance, without an income test, does not involve high marginal tax rates on the earnings of other family members. These effects of unemployment compensation on labor market transitions should be taken into account in any overall judgment on the role of state provision of income maintenance for the unemployed, along with the important contribution to distributional and stabilization goals that we have not considered in this paper.

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