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## Evaluating unemployment policies: What do the underlying theories tell us?

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THEORIES TELL US?**

Dennis J Snower

***HUMAN RESOURCES***



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Discussion Paper No. 1081

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## ABSTRACT

### Evaluating Unemployment Policies: What do the Underlying Theories Tell Us?\*

The paper surveys unemployment policies for advanced market economies and evaluates them by examining the predictions of the underlying macroeconomic theories. The basic idea is that, for the most part, different unemployment policy prescriptions rest on different macroeconomic theories, and our confidence in the prescriptions should depend – at least in part – on the ability of these theories to predict some salient stylized facts about unemployment behaviour. The paper considers four types of policies: laissez-faire, demand-management, supply-side, and structural.

JEL Classification: E32, E63, J21, J23, J32, J41, J51, J64, J65, J68

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## NON-TECHNICAL SUMMARY

It has become a platitude to say that every sensible piece of economic policy advice rests on a reasoned analysis of the underlying policy problem, and every reasoned analysis is based on a theory of how the economy functions. Politicians may believe that their policy proposals rest simply on 'common sense'; but if there is any sense in this common sense, it exists in the form of a coherent, self-contained theory. Given that this is obvious, it is surprising that the predictive power of macroeconomic theories is rarely explored, in isolation and in conjunction with one another, before these theories are used as the basis for policy formulation. This survey is a tentative step towards evaluating unemployment policies in this light.

The paper evaluates unemployment policies for advanced market economies by examining the predictions of the underlying macroeconomic theories. The basic idea is that, for the most part, different unemployment policy prescriptions rest on different macroeconomic theories, and our confidence in the prescriptions should depend – at least in part – on the ability of those theories to predict some salient stylized facts about unemployment behaviour. The paper focuses on five such stylized facts:

(1) Unemployment rates in most market economies display a high degree of positive serial correlation. This phenomenon is more pronounced in most European countries than in the United States.

(2) The duration of unemployment varies widely among market economies, even after normalizing for differences in unemployment rates. Over the past two decades unemployment durations have been longer in most European countries than in the United States, and increases in unemployment have been associated with more long-term unemployment in Europe than in the United States.

(3) In the United States labour and product market activity levels tend to move in tandem. This tendency is far less pronounced in most European countries.

(4) Over the past 25 years, European unemployment rates have varied less within business cycles than across them. This tendency, however, is not significant in the United States and Japan.

(5) Over the 1950s and 1960s, the average unemployment rate in Europe was significantly lower than that in the United States. Since the mid-1970s,

however, the average European unemployment rate has significantly exceeded the US rate.

The paper considers four types of policies:

(1) The laissez faire policy stance implies that the government should do little or nothing to influence unemployment. It is supported by the natural rate theory, the intertemporal substitution theory, and the real business cycle theory.

(2) Demand-management policies, based on Keynesian and New-Keynesian theories, as well as recent developments concerning transmission mechanisms between labour and product markets, cover both government employment and macroeconomic policies aimed at changing product demand.

(3) Supply-side policies, designed to raise the productivity of all workers cover a variety of measures ranging from reductions in payroll taxes to government infrastructure investment to improvements in information dissemination. The paper shows how the effectiveness of these policies is clarified through search theory, implicit contract theory, efficiency wage theory, as well as theories focusing on technological change and international trade as sources of unemployment.

(4) Structural policies aim to change labour market institutions so as to reduce unemployment. Labour union theories, bargaining theories, and insider-outsider theories can shed light on how these policies operate. The policies include reform of wage bargaining systems, measures to reduce labour turnover costs, job search support for the long-term unemployed, worksharing, early retirement, policies to reduce barriers to the creation of new firms, profit sharing, reform of unemployment benefit systems, recruitment subsidies, training subsidies, and benefit transfers.

## EVALUATING UNEMPLOYMENT POLICIES: WHAT DO THE UNDERLYING THEORIES TELL US?

by Dennis J. Snower\*

### 1. Introduction

This paper is motivated by a simple idea that has received lamentably little attention in the literature on unemployment policy: Different unemployment policies are generally based on different theories of unemployment, and our confidence in a policy should depend - at least in part - on the ability of the underlying theory to account for some prominent empirical regularities in unemployment behavior.

Some theories depict unemployment as the efficient outcome of market activity. These usually serve to rationalize a laissez faire policy stance. Others depict unemployment as the product of market failures. Here unemployment must be seen as the symptom of many possible diseases: many different market failures can produce the same problem of joblessness. And just like different diseases require different treatments, so different market failures may call for different government policies.<sup>1</sup> It is because different theories of unemployment focus on different market failures that different policies are generally based on different theories.

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<sup>1</sup>It may, but need not, call for government intervention at all since (a) it may not be feasible to correct come market failures through government unemployment policy and (b) even when it is possible to do so, the gains from correcting the market failures may fall short of the losses from the "government failures" (viz, policy-induced inefficiencies).

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It is difficult to evaluate the various unemployment policies by assessing the practical significance of the market failures identified by the underlying theories. After all, market failures arise when people are not fully compensated for the costs and benefits they impose on one another, and uncompensated costs and benefits are inherently difficult to measure. For this reason, it is natural to evaluate unemployment policies by investigating the predictive power of the underlying theories. And a particularly simple first step in this direction is to examine the degree to which these theories are able to account for some generally recognized regularities in the movement of unemployment rates in OECD countries over the postwar period.

This would perhaps be too obvious for words were it not so frequently at variance with the standard rationalizations of unemployment policies.

Admittedly, the suggested criterion is highly simplistic. It is reasonable to expect that, in practice, unemployment arises from several different causes operating simultaneously. Then it would be unreasonable to expect any single theory to explain all the salient empirical features of unemployment behavior in the OECD. But all that this paper claims is that confronting unemployment policies with these empirical features can be useful preliminary guide to the potential significance of these policies. It would surely be unwise to have a heavy stake in a policy whose underlying theory explains little of how unemployment has evolved in the postwar period.

The paper is organized as follows. Section 2 deals with the laissez-faire policy stance, based on theories of voluntary unemployment. Section 3 demand-management policies, resting on Keynesian theory. Section 4 turns to supply-side policies, aimed at raising workers' productivity. Section 5 considers institutional policies, designed to change labor market institutions. Section 6 considers contractual policies, aimed at changing the nature of labor market contracts. Finally, Section 7 concludes.

## **2. Laissez Faire**



As noted, the laissez-faire policy stance - for the government to do little or nothing to influence unemployment - is based primarily on models in which the observed swings in unemployment are viewed as the outcome of the optimizing decisions by job-seekers and job-providers in efficient markets. Here active unemployment policy is generally undesirable since it disturbs the workings of the Invisible Hand, interfering with people's free choices to remain unemployed.

There are two main types of laissez faire stances. One discourages government interventions aimed at influencing the long-run equilibrium unemployment rate (arguing that such interventions would be ineffective or undesirable), but acknowledges the possible effectiveness and desirability of policies to deal with cyclical swings in unemployment. In particular, it advocates predictable policies, whose effects can be readily foreseen by economic agents. This view receives its most forceful expression in the market-clearing variant of the natural rate theory. The other laissez faire stance discourages intervention not only with the long-run equilibrium unemployment rate, but also with cyclical unemployment swings. It rests primarily on the intertemporal substitution theory and the real business cycle theory.

## *2a. Policy Predictability*

The market-clearing variant of the natural rate theory<sup>2</sup> is an obvious vehicle for rationalizing the paramount importance of policy predictability. In this theory, unemployment is at its "natural rate" when people's expectations about wages and prices

<sup>2</sup>See, for example, Lucas (1972, 1975). Some economists use the term "natural rate of unemployment" more broadly, letting it stand for any short-term equilibrium unemployment rate, regardless of whether the labor market clears (e.g. Phelps (1970, 1994)) and regardless of the underlying institutional structure (e.g. Friedman (1968)). In that view, the natural rate clearly rest on much more than tastes, technologies and endowments; it could also depend on the existence of credit constraints, degree of competition in labor and product markets, the nature of wage bargaining institutions, the level of labor turnover costs, and the size of the incumbent workforces, just to give a few examples. Then, however, the natural rate theory becomes so all-inclusive, that it can no longer be distinguished from labor union, insider-outsider, efficiency wage and other theories.

are correct. Under conditions of perfect competition and perfect information, this natural rate depends only on people's tastes, technologies, and resource endowments. When people's wage-price expectations are out of line with actual wages and prices, then unemployment deviates from its natural rate.

Provided that tastes, technologies, and endowments<sup>3</sup> do not fluctuate cyclically, fluctuations in unemployment - according to this theory - must be explained by fluctuations in expected wages and prices around their actual values. In order for this theory to have predictive power, it needs to be combined with a theory of how expectations are formed. The dominant one is the rational expectations theory, which asserts...quite plausibly - that people are not fooled in ways that they themselves could have predicted. To test this hypothesis, we require yet another theory, one that describes people's "information sets", from which we could then infer what wages and prices they expect. This is, of course, an empirically impossible task; so the empirical models in this area generally assume that everyone has the same information sets as the authors of these models, except that the authors are able to get the data somewhat faster.

The implication of this approach is well-known: if people make no systematic expectational errors (viz. errors they could have predicted), then unemployment cannot diverge systematically from its natural rate. Just as expected wages and prices fluctuate randomly around their actual values, so unemployment will fluctuate randomly around the natural rate.

It is not hard to see why policy predictability is advisable in this context. Under well-functioning markets, there is clearly no efficiency case to be made for interfering with the natural rate of unemployment. Policies which have no influence on this natural rate - such a monetary policies - can only affect unemployment by driving a

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<sup>3</sup>Taking a wider view of the natural rate theory, it is worth noting that the degree of competition and the economic institutions governing behavior in the labor, product, credit, and international markets are generally not subject to cyclical fluctuations either. Thus cyclical fluctuations in unemployment remain to be explained by fluctuations in expectational errors.

wedge between actual and expected wages and prices. This, in turn, can be done through unexpected variations in policy instruments, such as unexpected changes in the money supply. Put simply, demand-management policies are effective only when they are deceptive. But deceptive policies are generally not in the public interest: if people were initially pursuing their own interests under perfect information - and thereby, through the workings of the Invisible Hand, promoting the public interest as well - unexpected changes in policy parameters will just prevent these people from doing this job so well. In short, stabilization policy is reduced to the limited task of being predictable.

The problem with this theory is that it fails to address many facts of European unemployment over the past decade. With the decline in union density and the moves towards deregulation, privatization, and liberalization of labor markets in many OECD countries over the 1980s, no one could argue that the natural rate of unemployment could have risen significantly. Furthermore, given the stable rates of inflation over much of the decade, it could also not be argued that people's wage-price expectations were getting further and further out of line with actual wages and prices. Nevertheless European unemployment rose massively in that decade. There is nothing in the market-clearing variant of the natural rate theory that provides a clue about why this happened.

Nor does this theory shed useful light on why unemployment has been so much more persistent in Europe than in the US, or why European unemployment rose with each major recession of the 1970s, 80s, and early 90s while US unemployment has always tended to return to its pre-recession level. Can we honestly believe that Europeans are much slower than Americans to adjust their expectations, so that expectational errors are more persistent in Europe than the US?

Beyond that, the theory tells us little, if anything, about why unemployment spells tend to be longer in Europe than the US (for given unemployment rates), why US unemployment rates are more variable than most European ones, why unemployment falls

unequally among different population groups, and why labor and product markets move so much more closely in tandem in the US than in Europe. Expectational errors provide few insights in these domains.

## *2b. Non-interference with Business Cycles*

The case against stabilization policies in the labor market is made quite explicit in the intertemporal substitution theory and the real business cycle theory.

As the name implies, the intertemporal substitution theory<sup>4</sup> is concerned with workers' desire to engage in intertemporal substitution of work for leisure, and vice versa, in response to various economic incentives. For example, if workers believe that real wages are temporarily depressed and will rise in the future, they may wish to partake of more leisure now and work harder later. The same may be true if they perceive real interest rates to be temporarily low, since that means that their current wage income cannot be transferred into the future at an advantageous rate.

The implication is that cyclical swings in employment may be optimal response - by individual agents and society at large - to temporary shocks to tastes, technologies, and endowments.<sup>5</sup> Whereas most economists used to see business cycles as undesirable, needing to be damped through stabilization policies, the intertemporal substitution theory indicates that this need not be so. Within the analytical framework of this theory, it is not in the public interest to implement counter-cyclical monetary and fiscal policies, since these would prevent people from making the optimal dynamic responses to external shocks.

This theory can be used to generate an empirical account of much of the unemployment persistence and variability observed in the US and other OECD countries.<sup>6</sup>

<sup>4</sup>See, for example, Barro (1981) and Lucas and Rapping (1969).

<sup>5</sup>The real business cycle theory, discussed below, makes much of this implication, particularly with respect to technological shocks.

<sup>6</sup>Inter-country differences in persistence and variability are motivated by differences in preferences and technological opportunities.

But it is hard to see intuitively how it can provide a reasonable explanation of European unemployment over the past 25 years. Many millions of Europeans joined the unemployment register in the mid-1970s, early 1980s, and early 1990s. Is it believable that these were simply colossal leisure binges, taken because workers were expecting real wages or real interest rates to rise later on? Regarding the upward trend in European unemployment rates since the mid-1970s, is it believable that we are observing a very long-term intertemporal substitution, whereby workers have decided to enjoy a lot of free time for two decades, perhaps with the intention of working very long hours for the next two decades? And even if the monstrous implausibility of these suppositions is put aside, we are still left with the fact that the available empirical evidence indicates that people's hours of work are unresponsive to real wage and real interest rate variations,<sup>7</sup> and that much of these variations tend to be permanent rather than temporary.

The real business cycle theory<sup>8</sup> builds on the intertemporal substitution theory and identifies technological shocks as the main source of macroeconomic fluctuations. Perfectly informed individuals, all maximizing their utility subject to technological and resource constraints, respond to these technological shocks by intertemporally substituting labor, leisure, and consumption.

Beyond the predictive problems of the intertemporal substitution theory, it is difficult to get a clear picture of what the technological shocks are. Whereas technological advances (that are the source of the booms in the real business cycle theory) are relatively easy to identify, the technological setbacks (that give rise to the recessions) are not.<sup>9</sup> It is hard to see how knowledge and expertise gets lost,

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<sup>7</sup>Some claim that the standard measures of the elasticity of labor supply are irrelevant because the choice between work and inactivity is often a discrete one. In that event, the theory requires that people's decisions about whether or not to participate in the labor force be very sensitive to variations in real wages and real interest rates.

<sup>8</sup>See, for example, King and Plosser (1984), King, Plosser and Rebelo (1988a,b), Kydland and Prescott (1982), and Long and Plosser (1983).

<sup>9</sup>In the real business cycle models, the technological shocks are measured by "Solow residuals", which are the differences through time between the growth rate of output and a weighted average of the growth rates of factor inputs. But given the difficulty of

particularly on the large scale that is necessary to account for the deep recessions we have witnessed over the past two decades. Some would argue that the negative technological shocks reflect such adverse macroeconomic events as oil price hikes or inappropriate investment (such as machinery that does not work or that produces goods for which the demand did not materialize). But the negative technological shocks of the real business cycle models last much longer than the oil price hikes did, and it would be strange - in the real business cycle world of rational expectations in clearing, perfectly functioning markets - for the exogenous shocks to generate sufficient price misperceptions for the resulting investment fluctuations to pull the massive OECD recessions in their wake.

Finally, it would be difficult, if not impossible, to defend the real business cycle models by de-emphasizing the role of technological shocks and concentrating on swings in, say, tastes instead. For then these models would be unable to explain why consumption rises and leisure falls in an economic upturn, and the opposite happens in a downturn. The reason is that a change in tastes does not affect the labor demand curve, and thus in an upturn employment would rise only if the real wage fell; but a fall in the real wage would reduce consumption and increase leisure - the opposite of what actually happens.

### **3. Demand-Management Policies**

Demand-management policies to reduce unemployment fall into two broad categories: (i) government employment policies, whereby the government stimulates employment directly by hiring people into the public sector, and (ii) product demand policies, which stimulate employment by raising aggregate product demand (e.g. through tax

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interpreting negative Solow residuals as technological regress, it is perhaps more plausible to see them as reflecting labor and capital hoarding.

reductions, increases in government spending on goods and services, or increases in the money supply).

### *3a. Demand-Management Policies in the Short Run*

For the "short run", in which wages and prices respond sluggishly to demand fluctuations, the main underpinning for both types of policies is the Keynesian theory.<sup>10</sup> Here recessions are characterized by deficient labor and product demand reinforcing one another: workers are unemployed because firms are not producing enough goods and services; firms are not doing so because there is too little demand; and demand is deficient because people are unemployed. In short, deficient demand in the labor market originates in the product market and deficient demand in the product market originates in the labor market. Activity in these two markets goes up and down together. The mechanism that couples these two markets is wage-price sluggishness. A fall in product demand will reduce labor demand if wages don't fall sufficiently; a fall in labor demand will reduce product demand if prices are sluggish downwards.

This interaction between product and labor markets gives demand-management policy a lot of leverage in the Keynesian theory. A rise in government employment will raise purchasing power of the people thereby employed. They, in turn, will demand more goods and services, which induces firms to hire more people, and so on. In the same vein, a stimulus to product demand (resulting, say, from a tax reduction) gives firms the incentive to raise employment, which creates more purchasing power, which raises product demand even further, and so on. The more sluggish wages and prices are, the greater these multiplier effects become.

Of course, in practice wages and prices are sluggish only over limited periods, and thus the critically important question is how short this "short run" really is. Clearly,

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<sup>10</sup>See Keynes (1936). A microeconomic rationale for these effects, based on exogenously given wages and prices, was proposed by Barro and Grossman (1976) and others.

if it is shorter than the time it takes for most firms to make and implement their employment and production decisions, then we cannot expect the Keynesian employment repercussions of demand-management policies to be significant. Wage-price sluggishness in excess of the relevant production and employment lags is required before Keynesian policies come into their own.

The Keynesian quantity-rationing theory<sup>11</sup> provided no guidance in this respect, since it merely assumed wages and prices to be indefinitely rigid. The New Keynesian theories of nominal sluggishness move beyond this primitive assumption. They seek to explain why wages and prices don't change sufficiently to obviate the need for substantial output-employment adjustments in response to changes in demand. Thereby this approach aims to shed light on the degree of wage-price sluggishness and consequently help determine the length of time over which Keynesian policy effects are operative. The three dominant New Keynesian theories in this area are the "menu cost" theory<sup>12</sup>, the theory of "near rationality"<sup>13</sup>, and the wage-price staggering theory<sup>14</sup>.

According to the menu cost theory, small costs of price change induce firms to adjust quantities instead of prices in response to a sufficiently small change in aggregate demand. The same holds even in the absence of price-adjustment costs when firms are "nearly rational", changing their prices only if that has a substantial effect on profits. There are, however, a number of obstacles to using these theories to derive the degree of wage-price sluggishness. First, the existing menu cost models show how product demand variations affect employment when the costs of price change are the only adjustment costs. In practice, however, employment adjustment costs (such as hiring, training, and firing costs) generally exceed the price adjustment costs by a large margin, and then it is no longer clear why product demand changes should have Keynesian effects on employment. Second, the menu cost theory implies that prices are either rigid

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<sup>11</sup>For example, Barro and Grossman (1976), Malinvaud (1977), and Muellbauer and Portes (1978).

<sup>12</sup>For example, Mankiw (1985).

<sup>13</sup>Akerlof and Yellen (1985).

<sup>14</sup>For example, Blanchard (1983), Calvo (1983), and Taylor (1979).



or completely responsive to demand shocks, for the cost of small price changes is generally no different from the cost of large price changes. This implication makes the theory unable to explain an important feature of wage-price sluggishness in practice, namely, that many firms change their prices frequently, but not by sufficiently large amounts to make significant quantity adjustments unnecessary. These two difficulties make it difficult for the menu cost theory to predict the degree of wage-price sluggishness and the short-run effectiveness of Keynesian demand management policy.

The theory of near rationality is subject to the first of these two difficulties: to explain the effectiveness of Keynesian demand management policy, the deviation from complete rationality must be sufficiently large to outweigh the costs of adjusting employment and production. Moreover, since it is hard to see how this deviation could be measured empirically, this theory also does not yield firm quantitative predictions on the degree of wage-price sluggishness.

The wage-price staggering theory demonstrates that if wages and prices, once set, are fixed over substantial contract periods and if different wages or prices are staggered (rather than set simultaneously), then a current change in aggregate product demand will affect production, employment, and unemployment well beyond the expiry of the current contract period. However, several important lacunae in this theory keep it from providing a firm basis to predict the degree of wage-price sluggishness. First, the staggering theory does not identify the wage-price adjustment costs that keep wages and prices fixed over substantial intervals. Without handle on these costs, we cannot derive the length of the contract periods that play such an important part in determining the degree of wage-price sluggishness. Second, the theory rests on the assumption that wages and prices are set in advance in nominal terms; it does not explain why wage-price setting rules generally do not involve indexing. If people have no money illusion and if simple indexation schemes (such as making the wage depend on an aggregate price index) are easy to formulate and monitor, it remains an open question why so many wages and

prices are set in nominal terms.<sup>15</sup> Third, the theory does not tell us what determines the degree to which wage-price setting rules are time-dependent (changing as a function of time) versus state-dependent (changing as a function of external contingencies)<sup>16</sup>. This is an important issue because these rules have very different implications for the degree of wage-price sluggishness following a change in product demand.<sup>17</sup> Fourth, little attention has been given to the question why wage-price decisions are staggered rather than synchronized. Ball and Romer (1989) attribute it to firm-specific shocks, whereas Ball and Cecchetti (1988) suggest that staggering can arise from firms' incentives to set their prices after they have gained information about their rivals' price changes. As these examples show, different sources of staggering imply radically different staggering structures and also, presumably, radically different degrees of wage-price inertia. And finally, different sectors of the economy are characterized by vastly different periods of nominal adjustment in practice, and the resulting patterns of staggering are enormously complex - perhaps too complex, at the requisite level of disaggregation, to be a convenient predictive tool.

Nevertheless, many economists agree that the Keynesian view sheds some light on unemployment behavior during deep recessions. When economies suffer from high unemployment and low capital utilization, increases in aggregate demand generally lead to increases in employment, and demand reductions usually lead to declines in

<sup>15</sup>See, for example, Carlton (1986), who finds significant price rigidities in manufacturing. Gordon (1990) has argued that, in the context of a complex input-output system, complete indexation may be difficult due to "the informational problem of trying to anticipate the effect of a currently perceived nominal demand change on the weighted average costs"; but it is hard to see why some (albeit imperfect) indexing should not be better than none.

<sup>16</sup>In practice, some wage-price setting rules appear to involve both time- and state-dependence, such as the provision in wage contracts to renegotiate at specified intervals but only under specified conditions, such as the inflation rate exceeding a certain magnitude. It has been suggested that if the major cost is that of learning the state, a time-dependent rule is desirable; whereas if the major cost is a menu cost, a state-dependent rule will be chosen. However, menu costs and learning costs are notoriously difficult to measure.

<sup>17</sup>Compare, for example, the non-neutrality of money under the time-dependent contracts of Taylor (1979) with the neutrality under the state-dependent contracts of Caplin and Spulber (1986).

employment. But the 1980s have exposed an important shortcoming of the Keynesian theory: for most of that decade, European labor and product markets did not move together at all. Product demand started to pick up towards the end of 1982, but employment did not start to improve until 1986 in the UK and even later in most other EC countries. This gap is simply too large to be explained away by inventory dynamics or lags between inputs and outputs in production processes. The Keynesian vision of tightly linked labor and product demand is called into question here. It turns out that the link was much stronger in the US than in most European countries over the 1980s. This disparity is simply too large to be rationalized simply in terms of greater wage-price sluggishness in the US than in Europe.

### *3b. Demand Management Policies in the Longer Run*

Now turn to the effectiveness of demand management policies in the "longer run", a time span long enough to permit full adjustment of wages and prices. A growing number of economists has come to suspect that the effectiveness of demand-management policy is undersold by the Keynesian mechanisms above, whereby the employment effect of demand management policy rests on wage-price sluggishness. Many believe that aggregate demand had a role to play in sustaining the periods of prolonged low European unemployment in the 1960s and prolonged high European unemployment in the 1980s. But for that to be the case, of course, the influence of aggregate demand on employment must extend well beyond the span over which wages and prices can be presumed sluggish.

To understand how aggregate demand could exercise such an influence, it is useful to picture the labor market equilibrium in terms of the intersection between a downward-sloping labor demand curve<sup>18</sup> and an upward-sloping wage setting curve<sup>19</sup>. In this context,

<sup>18</sup>This depicts the horizontal sum of firms' profit-maximizing relations between labor demand and the real wage, under perfect or imperfect competition.

<sup>19</sup>This could represent either a labor supply curve or the real wage that emerges, at any given level of employment, from wage bargaining or efficiency wage minimization. Strictly speaking, the wage setting curve need not necessarily be upward-sloping, just

an increase in product demand can stimulate employment by shifting either the wage setting curve or the labor demand curve outwards in real wage-employment space. If it was only the wage setting function that shifted (along an unchanged labor demand curve), then the real wage would move countercyclically. But since real wage movements are often acyclical or even pro-cyclical (particularly in the US), it is important to explore how product demand-management policy can shift the labor demand curve, thereby allowing for the possibility of pro-cyclical real wage movements.<sup>20</sup>

Since the labor demand curve is the set of real wage-employment combinations at which the real marginal value product of labor is equal to the real wage, a change in product demand can shift the labor demand curve only if it affects the real marginal value product of labor at any given level of employment. It is easy to show<sup>21</sup> that this occurs whenever the product demand change affects (i) the price elasticity of product demand, (ii) the imperfectly competitive interactions among firms, (iii) the user cost

larger in slope than the labor demand curve. Under some bargaining and efficiency wage conditions, the wage setting curve may be upward-sloping and this is clearly also the case when the curve represents a labor supply curve in a range where the income effect exceeds the substitution effect.

<sup>20</sup>There are, of course, a number of other ways whereby changes in product demand could affect employment, such as income effects on labor supply (e.g. Dixon (1987), Mankiw (1988), and Startz (1989)), increasing returns (e.g. Cooper and John (1988) and Chatterjee and Cooper (1989)), search with strategic complementarities (e.g. Howitt (1985) and Pissarides (1985)), union-induced labor immobilities which make the employment level sensitive to the allocation of government spending across sectors (Dixon (1988)), and unemployment persistence mechanisms in operation after a change in product demand temporarily reduces the real wage due to a temporary nominal wage rigidity (e.g. Lindbeck and Snower (1988)).

<sup>21</sup>Formally, the labor demand curve is given by  $F \cdot (1-m) \cdot h_n = w$ , where the left-hand term is the real marginal revenue product of labor and  $w$  is the real wage. Specifically,  $F$  is the number of firms,  $h_n = h_n(n, k)$  is the marginal product of labor (where  $n$  and  $k$  are each firm's use of labor and capital, respectively) and  $m = c/(\eta \cdot F)$  is the Lerner's index of monopoly power (where  $c$  is the conjectural variations coefficient and  $\eta$  is the price elasticity of product demand). Thus channels (i) and (ii) work through the degree of monopoly power, channels (iii) and (iv) work through the effect of the capital stock on the marginal product of labor, channel (v) deals with shifts of the labor demand curve due to changes in the number of firms (which also affects the degree of monopoly power), and channel (vi) is concerned with the direct effect of product demand on the marginal product of labor. Lindbeck and Snower (1994) provide a formal analysis of all these channels of transmission.

of capital, (iv) the degree of capital utilization, (v) the number of firms in operation, and (vi) the marginal product of labor.

Of these channels whereby product demand changes can be transmitted to employment, the first two do not appear to provide a firm foundation for the effectiveness of product demand management policy:

- *Price elasticity of product demand:* Some authors<sup>22</sup> have suggested that changes in government spending can affect employment by changing the composition of product demand and thereby changing the associated price elasticity of aggregate demand. There are, however, good reasons to believe that this would be a tenuous basis for government policy. First, an increase in government spending would shift the labor demand curve outwards through this channel only when the public-sector price elasticity of demand exceeds the private-sector elasticity, but there is no evidence that in practice this is consistently the case across sectors and through time. Second, this transmission mechanism has the implausible implication that whenever an increase in government expenditures shifts the labor demand curve outwards, then a tax reduction must shift that curve inwards; for whereas the former policy raises public sector spending relative to private-sector spending (thereby raising the aggregate price elasticity), the latter policy has the opposite effect. Affecting the price elasticity through changes in the composition of domestic versus foreign expenditures does not put us on firmer ground. In fact, if - as appears plausible - the foreign price elasticity exceeds the domestic one, an increase in domestic demand will reduce the aggregate elasticity and thereby move the labor demand curve inwards!

<sup>22</sup>A useful survey is contained in Dixon and Rankin (1993).

- *Imperfectly competitive interactions among firms:* Others<sup>23</sup> have suggested that oligopolists may behave more competitively in a boom, so that a rise in product demand could shift the labor demand curve outwards via its influence on competition. But Rotemberg and Saloner (1986) show this effect to hold only when firms are implicitly colluding oligopolists, and this induced-competition channel is a weak foundation for demand management policy.

That leaves the other four channels, which appear to be more promising avenues for the transmission of product demand management policies to employment.

### *3c. The Interaction between Demand- and Supply-Side Policies*

What these four channels have in common is that they all make the employment impact of demand management policies depend on their supply-side effects. Thereby supply-side policies gain a special role in enhancing the effectiveness of demand management.

- *The user cost of capital:* It is widely recognized that if an increase in product demand reduces the real interest rate, it will thereby reduce the user cost of capital, increasing the size of the capital stock and shifting the labor demand curve outwards, provided that labor and capital are Edgeworth complements in production (so that the marginal product of labor depends positively on the capital stock). This could happen either through expansionary monetary policy, or through a decline in the risk premium on investment<sup>24</sup> brought about by the expansion of demand. Naturally, if the rise in the demand takes the form of an increase in government spending, the real interest rate may rise (rather than fall), shifting the labor demand curve inwards through the above

<sup>23</sup>See, in particular, Rotemberg and Saloner (1986). This approach is in line with a long-standing tradition, characterized by Pigou (1927), Kalecki (1938), and Keynes (1939), who asserted that firms' market power may vary counter-cyclically.

<sup>24</sup>See Greenwald and Stiglitz (1988).

mechanism. Moreover, even if the real interest rate falls, the labor demand curve still will shift inwards when labor and capital are Edgeworth substitutes.

- *The degree of capital utilization:* It can be shown<sup>25</sup> that when there is excess capital capacity, demand management policy can affect the marginal product of labor by influencing the degree of capital utilization. To fix ideas, consider the following sequence of labor market decisions. First, each firm first sets its supply of physical capital and determines, from the range of its available technologies, those that are to become accessible through its capital stock (where, say, the range of accessible technologies may be characterized by an interval of capital-labor ratios within its ex ante production function). Next, the nominal wage is determined (say, through bargaining between the firms and its employees). Then the firms observe the position of their product demand curves, and finally they make their employment decisions. Under these circumstances, an unanticipated, adverse product demand shock could make it unprofitable for firms to operate at full capacity.<sup>26</sup> A subsequent, favorable demand shock would induce firms not only to hire more labor at the existing level of capital services, but also to raise the degree of capital utilization. When economies emerge from recessions in this way, with workers recalled to man vacant machines and restart idle assembly lines, the capital brought back into use is often highly complementary to labor. Through this channel expansionary demand management policy may raise the marginal value product of labor, leading to pro-cyclical movements of the real wage.

- *Entry and exit of firms:* Increases in product demand can induce entry of new firms, which shifts the labor demand curve outwards - both directly, and indirectly by increasing the degree of product market competition.<sup>27</sup> Specifically, if nominal wages are

<sup>25</sup>See Lindbeck and Snower (1994).

<sup>26</sup>In other words, the real marginal revenue product of labor at full capacity may fall short of the real wage.

<sup>27</sup>See, for example, Pagano (1990) and Snower (1983).

temporarily rigid, a rise in product demand can reduce the real wage by raising prices, leading to the entry of new firms. Once nominal wages adjust, this entry ceases, but the recently entered firms remain operative. In this way, a temporary nominal wage rigidity can give product demand management policy an influence on employment in the longer run.<sup>28</sup>

- *The marginal product of labor:* If the increase in government spending takes the form of industrial infrastructure investment, there may obviously be a direct stimulus to the marginal product of labor. In this case, expansionary demand management policy shifts the labor demand curve outwards through its effect on the capital stock.

The policy implication regarding these four channels are potentially of considerable significance: *The longer-term influence of product demand management policy on employment depends on the availability of a limited number of supply-side channels of transmission.* Supply-side policies - such as those which reduce the barriers to the entry of new firms,<sup>29</sup> or those which augment industrial infrastructure - can help open these supply-side channels and thereby improve the long-term effectiveness of demand management. In the long run, therefore, demand- and supply-side policies are interdependent.

<sup>28</sup>See Lindbeck and Snower (1989).

<sup>29</sup>These policies involve measures to dismantle government regulations restricting the creation of new firms, reforming the system of profit, income, capital gains, and wealth taxes to put new firms at less of a disadvantage in comparison with established firms, increasing competition among financial institutions so as to reduce credit constraints on new firms, and reducing the coverage of collective bargaining wage agreements so as to permit new firms to hire new recruits on competitive terms.



## 4. Supply-Side Policies

### *4a. Policies Centering on Physical Capital Formation*

These policies - which range from government infrastructure investment to policies that raise the rate of capital utilization, stimulate the entry of firms, or promote physical capital formation by reducing the user cost of capital - have already been discussed in the previous section. What they all have in common is that they raise the level of capital services provided in the economy and consequently, if labor and capital are complementary in the production process, increase the marginal product of labor.

### *4b. Policies Centering on Human Capital Formation*

Policies which focus on human capital formation include government training programs, training subsidies to firms or workers,<sup>30</sup> and - more broadly - also policies that reduce the rate of interest and thereby reduce the rate at which future returns to human capital formation are discounted.

Many of the market failures addressed by these policies can be analyzed effectively through the theory of search and matching.<sup>31</sup> In this theory, workers are not perfectly informed about the available jobs and firms are not perfectly informed about the available workers. Thus both sides of the market engage in search. Each agent acquires information up to the point at which the cost of searching for an additional job (or worker) is equal to the discounted stream of expected future returns from that job (or

<sup>30</sup>In general, training programs, whether in the public or private sector, may be divided into two broad categories: vocational training and "employability training". The latter focuses on a limited number of basic skills that enable people to adjust to a worker environment and adapt to the requirement of semi-skilled jobs. In some countries, Germany in particular, vocational training is integrated within a formal system of basic education.

<sup>31</sup>See, for example, Blanchard and Diamond (1989), Diamond (1982), Mortensen (1986), and Pissarides (1986).

worker). Unemployment arises because jobless workers know that there are vacant jobs with wages sufficiently high to make the return from search exceed the cost, but since they don't know precisely where these jobs are, they may not find them right away. The result is "frictional unemployment". This unemployment does not go away since there are always some workers getting fired, some entering the labor force, and some retiring from it. At center-stage in all search models lies a "matching function", which specifies how the expected number of matches is related to the number of unemployed workers and the number of vacant jobs.

It is not possible, of course, to attribute the rise in European unemployment to a deterioration of this matching technology, because the dissemination of labor market information has, if anything, improved with the passage of time. Nor are the recent periods of high unemployment related to comparatively high degrees of labor market "turbulence", i.e. sectoral imbalances responsible for job creation and job destruction.<sup>32</sup>

But search and matching models can be used to explain how unemployment can arise on account of market failures in the demand for and supply of training.<sup>33</sup> First of all, since unemployed people have relatively few firm-specific skills, training them may involve a relatively large poaching externality. Specifically, if unemployed people were given training, a relatively large share of the benefits from that training, in imperfectly competitive labor markets, would fall neither on the firms supplying the training nor on the workers receiving it, but on third parties, namely, the firms that may poach the workers after they have been trained. In that event, the social benefit from training will exceed the private benefit, regardless of how the costs of training are distributed between the trainer and trainee. Then the free market will generate too

<sup>32</sup>The turbulence hypothesis has been formalized by Lilien (1982), but has found no significant empirical support, e.g. Abraham and Katz (1986).

<sup>33</sup>There are a variety of market failures in training provision that apply to all classes of workers. See, for example, Becker, Murphy, and Tamura (1990) and Booth and Snower (1994). Some of these market failures fall with particular severity on the unemployed. It is these latter failures that make the case for using training subsidies as an instrument for combatting unemployment.

few matches between firms and currently unemployed workers, whereby the workers are made productive and profitable through training. As result, an inefficiently large number of these workers remains jobless.<sup>34</sup> This problem may become magnified considerably through the "low-skill, bad-job trap":<sup>35</sup> a deficient supply of trained job seekers induces firms to create an excessive number of unskilled vacancies, and these in turn further reduce workers' incentives to acquire training; this leads to even more unskilled vacancies, and so on.

It could be argued that the market failures above are particularly pronounced with regard to the long-term unemployed. They are likely to be particularly poorly endowed with firm-specific skills and thus particularly prone to the poaching externality and the low-skill, bad-job trap.

In response, government training programs or training subsidies to the unemployed - particularly the long-term unemployed - may have a role to play in combatting unemployment. Many government training programs, however, are ill-suited to firms' needs. This is scarcely surprising, since these needs are extremely diverse while government training programs are inevitably standardized and limited in variety. In this regard, training subsidies granted to firms appear preferable, for the firms then have the incentive to make the resulting training maximally appropriate to their available jobs. To keep firms from illicitly diverting the training funds to other purposes, it may be necessary to provide the training subsidies only for programs leading to nationally recognized qualifications, granted by institutions independent of the firms receiving the subsidies.<sup>36</sup>

To assess the theory underlying this policy approach, it is worth noting that some of the rise in European unemployment over the past two decades might arguably be due to the interaction between the market failures above (on the one hand) and the joint pull of skill-biased technological change and international trade (on the other). Both

<sup>34</sup>See Snower (1994b).

<sup>35</sup>See Snower (1994a).

<sup>36</sup>The German apprenticeship system has both of these ingredients.

technological developments that raise the productivity of the skilled relative to the unskilled workers, as well as rising trade with countries that have a comparative advantage in producing goods which are relatively intensive in unskilled labor, pull in the same direction, in that they reduce the demand for unskilled labor relative to the demand for skilled labor. And if the market failures above are responsible for a deficiency in the acquisition of skills and an excessive number of unskilled workers without jobs, then that technological change and trade could lead to a rise in unemployment.

In addition, an expansion of trade or an increased rate of technological change could generate unemployment by raising the amount of labor market "turbulence", particularly by increasing the rate of job creation and destruction.<sup>37</sup> This, of course, is not an argument for policies limiting the degree of technological change or trade, for - as is well-known - the latter generally permit a given amount of goods and services to be produced with less labor input, and thereby could improve everyone's material standard of living, provided that the appropriate redistributions from the winners to the losers can be made without substantial loss of efficiency. Rather, the above diagnosis is an argument for job search support in order to improve the effectiveness of the matching process.

Moreover, according to the Keynesian theory, technological improvements and specialization in skill-intensive goods both enable the economy to satisfy a given (deficient) aggregate product demand with less labor input. Hence, employment will fall and unemployment will rise. This may strengthen the need for expansionary demand management policy.

#### *4c. Job Search Support and Information Dissemination*

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<sup>37</sup>As noted, however, there is little evidence that this has actually happened in advanced industrialized countries over the past two decades.

This general policy approach covers such measures as counselling the unemployed, assisting them with personal problems such as alcoholism and drug addiction, and alerting them to available training opportunities.<sup>38</sup> It also involves disseminating information about available labor services to firms and about available vacancies to workers.

If imperfect information about vacant jobs and unemployed workers were the only problem for this policy approach to overcome, its potential would be quite limited for the simple reason that frictional unemployment accounts for only a small fraction of the European unemployment problem. However, the same strategy may also be useful in overcoming the discouragement and demoralization that prevents many long-term unemployed people from seeking jobs effectively. The search and matching theory views this problem as the consequence of a decline in unemployed people's returns from job search as their unemployment spells lengthen. The declining returns may, in turn, be due to the depreciation or obsolescence of their skills and to a resulting fall in firms' efforts to attract these workers.

Another reason why workers' search intensity may decline as their period of unemployment proceeds is that their preferences gradually change. In particular, the long-term unemployed can become accustomed and reconciled to remaining jobless, adopt it as a way of life, and stop searching seriously at all.<sup>39</sup> Counselling and personal assistance may help to mitigate these problems by restoring the attitudes and expectations necessary for successful job search strategies.

The potential importance of this policy approach may be highlighted by the recognition that the decline of search intensity with unemployment duration undoubtedly

<sup>38</sup>The EC Commission has laid stress on these measures in combatting European unemployment. For example, the Council Resolution of 29 May 1990 recommended that counselling interviews be made available to all long-term unemployed people. There is also wide recognition that these measures are have a chance of being particularly effective only if they are combined with other active labor market policies, such as training programs.

<sup>39</sup>They have been said to become "addicted" to being unemployed. The theory of addiction provides some useful insights here. See, for example, Becker and Murphy (1988).

plays a significant role in explaining unemployment persistence (viz, the dependence of current unemployment rates on past unemployment rates).<sup>40</sup> It also helps explain why the burden of unemployment is distributed unequally. If people's search intensity falls the longer they remain unemployed, and if the corresponding search intensity of potential employers falls as well, then the expected future length of these workers' unemployment spells will depend positively on how long they have been unemployed already.

Aside from the search and matching theory, another rationale for policies to improve information dissemination - as well as various other policies to be discussed below - comes from the efficiency wage theory. Here firms are assumed to have imperfect information about individual employees' productivities and are thus unable to make their wage offer contingent on their employees' performance. The firms, as wage setters, observe that by raising their wage offers they are able to stimulate the average productivity of their workforce. The reason is that higher wage offers enable a firm to recruit more highly qualified employees or motivate employees to work harder.<sup>41</sup> In other variants of the theory, higher wages discourage workers from quitting the firm, thereby reducing the firm's labor turnover costs.<sup>42</sup> Consequently firms may have an incentive to keep the wage above the level that would be necessary to ensure full employment. The unemployed are unable to get jobs by offering to work for less than the prevailing wage, because it is not in the firms' interests to allow the wage to fall.

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<sup>40</sup>This is, of course, not the only conceivable explanation of unemployment persistence. Other, comparably important, causes are employment adjustment costs, wage-price staggering effects, insider membership effects, and labor force participation adjustment costs.

<sup>41</sup>In Weiss (1980) a higher wage offer encourages workers of high skill, who were previously self-employed, to join the firm. In Shapiro and Stiglitz (1984) the firm randomly samples workers' effort and fires those who shirk; thus a higher wage offer raises effort by raising the expected penalty for shirking. In Snower (1983) a higher wage offer discourages workers from searching on the job and thereby promotes productivity. In Akerlof (1982) workers agree to work more than what is specified in their contract and firms, in return, pay more than the minimum amount that would be necessary to attract them.

<sup>42</sup>See, for example, Salop (1979) and Stiglitz (1985).

In this context, policies that improve the dissemination of information about workers' ability, motivation, and quit behavior would enable firms to base their wage offers more closely on workers' individual productivities and potential labor turnover costs, thereby reducing the role of wages as an incentive mechanism and bringing down the associated level of unemployment.

The great strength of the efficiency wage theory is that it provides one conceivable explanation for why, even under perfectly flexible wages, people may be unemployed even though they would prefer to do the jobs of the current job holders at less than the prevailing wage. Beyond that, however, it is not clear that the theory can shed much light on why EC unemployment has risen over the past two decades, why US and Japanese unemployment has fared better, why the average duration of unemployment in Europe has significantly exceeded that in the US and Japan since the mid-1970s, why labor and product market activities tend to move together in the US but not in Europe, or why unemployment in many countries varies less within a business cycle than from one cycle to the next. These phenomena clearly cannot be ascribed to differences in monitoring technologies through time and across countries. For instance, it is quite implausible that EC unemployment should have risen because firms have become worse at monitoring their employees' performance; nor is it plausible that US unemployment recovered more quickly from the recent recessions than EC unemployment because US firms have more information about their employees than EC firms.<sup>43</sup>

<sup>43</sup>Of course many efficiency wage models also explain how unemployment may rise in response to a drop in labor productivity, a rise in the real interest rate, or a rise in the unemployment benefit. But as with the search models, the efficiency wage models cannot lay unique claim to these predictions. The efficiency wage models do not add much to what other theories have to say in this respect. Similarly, the inclusion of labor turnover costs in an efficiency wage setting can provide an explanation of why unemployment rates tend to be serially correlated, and differences in the magnitude of these costs can help account for inter-country differences in such serial correlation as well as inter-country differences in unemployment durations. But labor turnover costs are not an intrinsic building-block of efficiency wage models. These models can rationalize the existence of unemployment even in the absence of labor turnover costs, and the addition of these costs to a wide variety of other theories would yield equal insights into unemployment dynamics.

#### *4d. Policies to Stimulate Worker Mobility*

Some policies that are meant to reduce the burden of housing costs to the poor - such as rent control or low-cost public housing - reduce worker mobility and, by inhibiting workers from moving to the available jobs, create unemployment. This is a potentially significant problem in a number of OECD countries containing both booming and slumping regions and large house-price and rent differentials across these regions.<sup>44</sup> These differentials can become an especially serious impediment to matching in the labor market, since they often expand with the mismatch between vacancies in the booming regions and unemployment in the slumping ones. The reason, of course, is that the greater is the regional mismatch, the greater will the house-price and rent differentials be as well. Rent control and housing subsidies that are tied to the current place of residence give leverage to this obstacle to matching. Replacing these policy interventions by more efficient ways of redistributing income (such as conditional negative income taxes, discussed in Section 5c) could therefore help reduce unemployment.

A similar argument can be made for policies that increase the portability of health insurance and pensions between firms.

### **5. Institutional Policies**

Institutional policies, as their name suggests, aim to change labor market institutions so as to reduce unemployment. These policies come in many guises, of which only the most prominent will be considered here.

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<sup>44</sup>See, for example, Bover, Muellbauer, and Murphy (1989).



### *5a. Policies to Reduce the Power of Labor Unions*

Policies to reduce the power of labor unions range from restrictions on secondary picketing, to laws prohibiting closed shop agreements, to regulations restricting the coverage of union wage agreements, and much more. These policies may be analyzed straightforwardly through the theory of labor unions. In the traditional variants of this theory,<sup>45</sup> all union members are assumed to have identical preferences and an equal share in the available work. Then the union represents the interest of its members by exerting its monopoly power in wage setting, much like sellers of goods or services exert their monopoly power in price setting. The resulting wages will be higher and employment will be lower than it would have been in the absence of the union's influence on the wage. If all workers in the economy belong to unions, then aggregate employment will be less than it would have been under full employment. The difference is unemployment (or under-employment).

More recent union theories recognize that unions take greater account of the interests of their employed members than of the unemployed and that the employed workers have greater access to work than the unemployed do. The unemployment arising in this setting may be voluntary from the vantage point of the employed union members, but is generally involuntary from the vantage point of the unemployed, since the latter could be made better off by a wage reduction associated with a rise in employment.

The main theoretical weakness of this theory lies not in what it tells us, but in what it doesn't. It doesn't tell us why the unemployed don't leave unions that don't represent their interests, and start new unions making lower wage claims. Nor does it tell us what gives unions their clout. Since union coverage in most market economies is far under 100%, why don't employers simply throw out high-wage union members and hire low-wage non-members instead?<sup>46</sup>

<sup>45</sup>See, for example, McDonald and Solow (1981) and Oswald (1982, 1985).

<sup>46</sup>This question is answered by the insider-outsider theory, discussed below. But if the answer of the insider-outsider theory is accepted - namely, that it is labor turnover

On the empirical front, there is some evidence of an inverse relation between inter-country differences in unemployment rates (on the one hand) and inter-country differences in indexes of union power and union coverage (on the other) over the postwar period. Yet the union theories have not performed well over the past decade in predicting movements of unemployment through time. In the first part of the 1980s, for example, union membership in the UK and several other European countries fell while unemployment rose. For this reason, it is certainly premature to say that unemployment policies designed to reduce union power are on a firm predictive foundation.

### *5b. Reforming the Wage Bargaining System*

In recent years there has been a growing call to strengthen firm-level and national-level bargaining at the expense of bargaining at the sectoral level.<sup>47</sup> This policy strategy is based on the analysis of Calmfors and Driffill (1988), who explore how the economic efficiency of wage bargaining depends on the number of independent agents engaged in bargaining. They argue that when there is a high degree of centralization in bargaining - with few unions confronting few employers confederations, such as in Austria and Sweden - the negotiating partners internalize most of the effects of their claims; in particular, the unions take account of the price increases

costs that prevent firms from replacing union members by non-members - the traditional union theories must undergo substantial revision. (See, for example, Lindbeck and Snower (1987).)

<sup>47</sup>This issue can be addressed through labor market bargaining theory, which deals with the question of how employers and employees split the economic rent from employment activity. There are two broad approaches: in one, employers and employees bargain over wages and, once the wages have been set, the employers make the employment decisions unilaterally; in the other, the employers and employees bargain over wages and employment simultaneously. (There are also models that straddle these two extremes, e.g. Manning (1987).) The former are called "right-to-manage models" (since the firms make the employment decisions by themselves). It can be shown that the bargaining outcome here is inefficient, in the sense that it is possible to find wage-employment combinations that make one party to the negotiations better off without making the other party worse off. This is a common feature of institutional setups in which the price and quantity decisions are made by different agents. The inefficiency of course does not arise in the latter models, which are therefore called "efficient bargain models".

associated with their wage claims, and the employers take account of the wage increases associated with their employment and pricing decisions. The resulting wage-employment outcome is therefore reasonably efficient. On the other hand, when there are large number of negotiating workers and firms, each occupying a small portion of the market, the resulting activity is efficient for the standard competitive reasons. The US approximates this setup. Calmfors and Driffill claim that it is only in the intermediate range, where the independent negotiators are sufficiently few in number to have market power, but sufficiently numerous to ignore the external effects of their decisions, that gross inefficiencies arise. Calmfors and Driffill (1988) adduce some empirical evidence in favor of this thesis, and Layard, Nickell, and Jackman (1991, p.55) provide cross-section evidence that the unemployment rates in 20 OECD countries tend to be inversely related to the degrees of union and employer coordination.

On this account, it has been argued, wage bargaining systems need to be either highly centralized or highly decentralized.<sup>48</sup> Policies that reduce the power of labor unions, reduce labor turnover costs, and promote international trade are all likely to strengthen decentralized, firm-level bargaining. Government sponsorship of "social pacts" - whereby unions accept targets for nominal wage growth (based on productivity growth and price inflation), firms accept targets for price increases (based on wage inflation), the central bank sets the growth of the money supply with a view to non-inflationary growth, and fiscal authority aims to control unemployment - encourages centralized, national-level bargaining. As a practical matter, however, wage bargaining systems are very difficult to reform and thus this structural policy should be seen more as a long-term desideratum than as a short-term tool.

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<sup>48</sup>However, in a more recent article (Calmfors (1993)), Calmfors distances himself somewhat from this simple policy conclusion. He acknowledges that centralization is a multi-faceted feature of bargaining systems and that labor market performance is likely to respond quite differently to changes in the degree of centralization across occupations, sectors, unions, employers confederations, and geographic regions. He also notes that the degree of centralization is likely to be particularly significant for labor market performance only in the non-tradeable sectors, where foreign competition is weak.

### *5c. Reforming the Unemployment Benefit System*

The main deficiency of all unemployment benefit systems is that, in helping to cushion the blow of unemployment, they make the underlying problem worse. The reasons are that unemployment benefits (i) discourage job search (because when an unemployed person finds a job, the unemployment benefits are withdrawn and taxes are imposed) and (ii) put upward pressure on wages (by improving incumbent workers' negotiating positions). The first effect lies in the domain of search and matching theory, the second is the province of bargaining theory. Together, these effects make unemployment benefit systems inherently inefficient and inequitable.

In reforming unemployment benefit systems, it is important to distinguish carefully between the equity and efficiency objectives of these systems. The equity goal is simply to redistribute income from the rich to the poor. The efficiency goal is to respond to market failures in the provision of unemployment insurance.<sup>49</sup> But unemployment benefits are generally a very poor tool to accomplish these objectives.

With regard to equity, it is worth keeping in mind that, for most poor people, employment is the best - often the only - way to overcome poverty. Thus it is particularly unfortunate that unemployment benefits discourage employment, since they thereby make the distribution of employment opportunities more unequal. Clearly, a more effective way to redistribute income from rich to poor is to use income as the criterion of redistribution; the employment criterion is obviously a blunt instrument for this purpose since some employed people are poor while some unemployed people are well-off.

With regard to efficiency, the gains from provision of unemployment insurance must be set against the efficiency losses that arise when unemployment benefits discourage

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<sup>49</sup>Under free market conditions, the private sector generally has deficient incentives to provide unemployment insurance, due to moral hazard and adverse selection problems (viz. giving people unemployment insurance increases their chances of being unemployed) and credit constraints (which prevent workers from purchasing their optimal amounts of insurance).

employment and encourage unemployment. It is by no means a foregone conclusion that the efficiency gains will invariably exceed the associated losses. In any case, the unemployment benefit schemes that predominate in Europe - characterized by either flat-rate components or ceilings on benefits that depend on past wages - have much less in common with optimal unemployment insurance schedules than with standard redistributive schemes. In short, the unemployment benefits encountered in practice are not designed to yield major efficiency gains in correcting for failures in the unemployment insurance market.

But that is nowhere near the end of the problem. The efficiency wage, labor union, and insider-outsider<sup>50</sup> theories identify market failures that give free market activity a tendency to yield excessively high wages and excessively low employment. Unemployment benefit systems exacerbate these market failures by driving wages up further and discouraging employment even more. Furthermore, these market failures are perpetuated through various dynamic effects. As noted above, the longer people are unemployed, (a) the more their skills depreciate and become obsolescent, (b) the more discouraged and ineffective they become in the process of job search, and (c) the more wary firms become of hiring them. When the government rewards unemployment (through unemployment benefits) and penalizes employment (through income taxes), it unwittingly amplifies these dynamic effects by keeping unemployed people from competing for jobs and becoming "enfranchised" in the wage determination process. As result, their unemployment becomes less effective in moderating wages or raising firms' return from searching for new recruits. In this way, unemployment benefit systems make unemployment more persistent, and put the long-term unemployed at a greater disadvantage in competing for jobs.

For all these reasons, unemployment benefit reform has become a topic of growing policy interest throughout Europe. But while it is relatively easy to recognize the need for reform, it is frightfully difficult to agree on its content. The critical question is how to provide a safety net for the disadvantaged and the unfortunates without

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<sup>50</sup>This theory is discussed below.

dramatically reducing people's incentives to fend for themselves, thereby creating more disadvantaged and unfortunates in the process.

A growing number of European economists<sup>51</sup> argue that unemployment benefits should be generous, but for a limited period time. The generosity is allegedly required to give people the opportunity to make judicious job matches, which credit constraints may keep them from doing. Limited benefit duration, it is claimed, is necessary to induce people to find work quickly, before they become discouraged, stigmatized, and deskilled. This advice sounds eminently sensible to the uninitiated public, but little attempt has been made thus far to explore whether the theory that keeps this advice afloat captures empirically important determinants of unemployment. It seems doubtful, to put it mildly, that workers' credit constraints are an important aspect of the European unemployment problem. If they were, then the problem would be that unemployment durations are too short, resulting in over-full employment. This, it appears, is the least of Europe's worries.

Beyond that, the prescription to shorten benefit duration characteristically becomes vague once we ask what happens to people who remain jobless after their unemployment benefits have expired. Some recommend that they be given training, others put more emphasis on job counselling. But that still leaves us with the question of how to treat those who are left unemployed even after the training and counselling. At that point many European economists revert to the popular European opinion that the social safety net cannot be withdrawn from these hapless individuals; income support and a range of Welfare State benefits are then required to keep them from destitution. Then, however, a short benefit duration may cease to give unemployed people an effective incentive to find jobs promptly.

This is in fact the problem that the current, unreformed European benefit systems face. Many European countries - such as Germany, France, Greece, Ireland, and the Netherlands - grant some form of unemployment insurance of limited duration, followed by

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<sup>51</sup>See, for example, Layard, Nickell, and Jackman (1991).

unemployment assistance that is frequently unlimited. It is hard to see how the disincentive effects generated by these systems could be overcome simply by shortening the time span for unemployment insurance and inserting a period of training and counselling prior to the receipt of the unemployment assistance.

Overall, it is safe to say that unemployment benefit reform should be guided by the objective to overcome its two biggest deficiencies, namely, the disincentive effects and the imperfections in targeting the poor. It is arguable that both could be mitigated by simply replacing unemployment benefit systems by a conditional negative income tax program,<sup>52</sup> whereby people's receipt of negative income taxes is made to depend on their ability to pass stringent tests on their willingness and readiness to work.<sup>53</sup>

Another policy proposal, concerned with redirecting unemployment benefits to provide employment vouchers, is discussed below.

## 6. Contractual Policies

"Contractual policies" are ones designed to change the nature or provisions of labor market contracts, with a view to reducing unemployment. Here, too, we find a wealth of candidates and, in the interest of brevity, I shall be highly selective.

### *6a. Worksharing and Early Retirement*

Worksharing and early retirement has begun to look attractive to an increasing number of European policy makers, particularly in Germany. It is based on the view that there is a fixed amount of work to be done in an economy in any given period of time, and thus it is the job of the policy makers to decide how this work is to be distributed

<sup>52</sup>See, for example, Coe and Snower (1994) and Snower (1994e) for more detail on this policy approach.

<sup>53</sup>Handicapped people and those who are likely to be more productive in the household sector than in the labor market (like single mothers with several infants) would be exempted from this condition. See Snower (1994c).

across the available workforce. If it is currently distributed unequally, with most people in the workforce working full-time and some remaining unemployed for prolonged periods, worksharing and early retirement could spread the job opportunities more equitably.

But to call this a "theory" is an overstatement. Most economists would rather call it the "lump-of-labor fallacy", since it is well understood that the amount of work to be done in an economy is not a fixed number of hours, beyond the influence of the policy makers.<sup>54</sup> The Keynesian theory drives this point home particularly forcefully: the more people are employed, the more they earn, the greater their purchasing power, the more they spend, and the more people firms will seek to employ.

Moving beyond their non-existent theoretical foundation, job sharing and early retirement schemes suffer from a number of serious problems. First, they tend, in practice, to increase nonwage labor costs, particularly those associated with hiring, screening, training, and administration. Thus they may be expected to discourage employment and create more unemployment. Second, insofar as they are successful in reducing the pain from unemployment by distributing it among more people, they lessen the political pressure on governments to address the unemployment problem through more promising means. Third, in reducing the number of unemployed people competing for jobs, they may well drive up wages and stimulate price inflation. This may induce governments to implement restrictive macroeconomic policies, which would raise unemployment, possibly creating a further perceived need to redistribute job opportunities through yet more worksharing and early retirement. The main advantage of worksharing and early retirement schemes is that they may "enfranchise" a larger number of people in the wage determination process and thereby moderate the insiders' wage demands. It appears unlikely, however, that this advantage should dominate the disadvantages above.

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<sup>54</sup>Of course, economies may generate something like a "lump of labor" over the very short run, that is, over a time span short enough to preclude readjustments in the size of firms' workforces. But this time span is of little interest for the design of unemployment policy.



## *6b. Policies Centered on Labor Turnover Costs*

Policies that aim to reduce unemployment by mitigating the harmful effects of labor turnover costs, are as varied as the turnover costs themselves. Some involve dismantling job security legislation (such as laws reducing statutory severance pay or simplifying mandated firing procedures); others reduce the ability of incumbent workers to exploit existing labor turnover costs in order to boost their wages (such as legal restrictions on strikes and picketing); yet others help the unemployed surmount the obstacles created by turnover costs (such as training subsidies, recruitments subsidies, profit-sharing schemes, policies to reduce the barriers to the entry of new firms, and reform of wage bargaining systems). This section focuses attention on the first two groups of policies; policies in the third group are discussed in Sections 3c, 4b, 5b, 6c, 6d, 6e, and 6f.

What the first two groups of policies have in common is that they reduce the market power of the "insiders" (incumbent employees whose jobs are protected by significant labor turnover costs) and thereby strengthen the position of the "outsiders" (who are either unemployed or have jobs that are not protected in this way). In the process, insiders become less insulated from the forces of labor demand and supply and firms find it easier to hire and fire employees. The upshot is (a) insider wages face downward pressure, since insiders now face greater competition from outsiders and (b) employment becomes more responsive to variations in revenue and cost conditions. The first effect stimulates employment,<sup>55</sup> for as insiders become more profitable, firms' have a greater demand for new recruits, who eventually turn into insiders. The second effect reduces the degree of employment and unemployment persistence.

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<sup>55</sup>Of course, a reduction in labor turnover costs also has a direct effect on employment. This effect could be either positive (as when a reduction in hiring costs stimulates hiring) or negative (as when a reduction in firing costs leads to more firing). See, for example, Bentolila and Bertola (1990).

This policy approach lies in the domain of the insider-outsider theory.<sup>56</sup> Here labor turnover costs, falling at least in part on the firms, give market power to the insiders, who know that their employers would find it costly to replace them. The insiders are assumed to use this power to pursue their own interests in the wage setting process. Although the resulting insider wages are higher than they otherwise would have been, the labor turnover costs discourage firms from firing the insiders. Of course the excessive insider wages also discourage the hiring of new entrants.

Some of the labor turnover costs (such as training costs) are an intrinsic part of the production process; others (like severance payments) are primarily associated with rent-seeking activities. The rent-related turnover costs give the insiders preferential conditions of employment over the outsiders. Then unemployment can arise on account of the outsiders' inferior employment opportunities. In this context, policies that reduce labor turnover costs, or ones that check the insiders' ability to exploit them in wage setting, will generally lead to a reduction in unemployment.

The insider-outsider theory is able to account for a variety of empirical regularities in unemployment behavior. The relatively high labor turnover costs in Europe - both in their own right and through their influence on insiders' wages - play a role in making European unemployment more persistent (serially correlated) than US unemployment. Since high labor turnover costs make firms reluctant both to hire and to fire employees, they thereby raise the duration of unemployment. In this way, Europe's relatively high labor turnover costs can lead to its relatively high unemployment durations and relatively low unemployment variability, in comparison with the US. Furthermore, since labor turnover costs raise insiders' job retention rates relative to the outsiders' job acquisition rates, they imply that unemployment falls relatively heavily on population groups with relatively unstable work patterns (i.e. relatively high entry and exit rates in the job market), such as young people.

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<sup>56</sup>See, for example, Lindbeck and Snower (1986, 1988).

Insofar as many of the full-time unskilled jobs in the traditional industrial sectors are associated with significant labor turnover costs, the insider-outsider theory also gives an account of why wages in these sectors have refused to fall with falling demand. It also helps explain why much service-sector employment and temporary employment - associated with relatively low turnover costs - has been buoyant in comparison with industrial employment in the OECD.

When business cycles are short-lived and mild, most European countries - facing comparatively high labor turnover costs - may be expected to do relatively little hiring or firing, hoarding labor in the slumps and brining it back into use in the booms. But in the face of deep, prolonged recessions, these countries will stop hoarding and start firing labor. In the subsequent recovery, firms will then be comparatively slow to rehire this labor, fearing that they may incur further firing costs should the recovery not materialize, and thus investment in labor-saving capital equipment may then take the place of new employment. This helps explain why unemployment rates in Europe were significantly lower than in the US in the 1950s and 60s (when business cycles were short-lived and mild), but significantly higher since the mid-70s, why US unemployment has been more variable than European unemployment, and why production and employment move together to a greater degree in the US than in Europe.

### *6c. Profit Sharing*

Under profit sharing contracts, a part of workers' remuneration is paid as a fraction of the profits earned by their firms (or specific teams within those firms).<sup>57</sup> For any given level of remuneration, it is clear that a firm's marginal cost of employment is lower under profit sharing than under a fixed wage, since (under diminishing returns to labor) the profit share declines as employment rises, whereas a fixed wage, by definition, doesn't. Consequently, it is alleged, profit-sharing

<sup>57</sup>See Weitzman (1983, 1984).

contracts lead to lower unemployment than wage contracts do. Weitzman has suggested that, in a world where wages seldom involve profit sharing, firms have deficient incentives to offer profit sharing contracts, and thus government subsidies for profit sharing are called for.

The claim that profit sharing contracts reduce unemployment is less general than it may appear at first sight. It turns out that the effectiveness of profit sharing depends crucially on what is generating the unemployment. If, for instance, the unemployment is an efficiency-wage phenomenon, the switch from wage contracts to profit-sharing ones will do little, if anything, to reduce unemployment, since workers' incentives to shirk and quit depend on the total amount of remuneration, but not on how this amount is divided between wages and profit shares. The same may be said of firms' ability to attract workers of relatively high productivity.

Yet if the unemployment is predominantly generated by insider-outsider considerations, profit sharing may have an effective role to play. In the insider-outsider theory, the outsiders are unable to "bribe" insiders to forego the rent-seeking activities that keep the outsiders from getting jobs. The insiders may, for example, boost their wages and protect themselves from competition with outsiders by refusing to cooperate with them in the process of production, thereby creating an insider-outsider productivity differential; or they may harass outsiders who offer to work for less than the prevailing wages and thereby make the available jobs more disagreeable for those outsiders than for the insiders. Alternatively, the insiders may be involved in determining the wages of new entrants, and may use their market power to drive entrant wages up, thereby discouraging the employment of entrants that would drive down the insiders' marginal products.

In this context, profit-sharing contracts may be construed as a device that may permit the outsiders to bribe the insiders to stop these activities, so that everyone - the insiders, the outsiders, and their employers - can be made better off. In particular, if insiders were given a bonus for consenting to profit-sharing contracts

for new entrants, the firm's marginal cost of hiring new entrants would fall, the entrants would receive more than they did when they were unemployed, and the firm's profits would rise. In the process, of course, unemployment would fall.

But while profit-sharing schemes are indeed promising in this context, it is important to be aware of some potential difficulties. First, it may be impossible to induce the insiders to consent because the insiders' rent-seeking activities - like their harassment activities - may not be objectively monitorable. Second, to make profit sharing operational may require implementing costly monitoring procedures that enable workers to gain access to profit information.<sup>58</sup> Third, the extra profit generated through the introduction of profit sharing may be insufficient to compensate the insiders for their loss of market power resulting from the inflow of new entrants. Fourth, the extra profit generated may be insufficient to pay the premium that the new entrants would require to induce them to bear the income risk associated with profit sharing. And finally, the insiders may refuse to be bribed because that would create a two-tier remuneration system that would give firms an incentive to lay off the insiders and retain the entrants, once the latter had been fully trained.

#### *6d. Low-Wage Subsidies and Payroll Tax Reductions*

These set of policies<sup>59</sup> are meant to address the problem that, in many OECD countries, the relative position of workers at the bottom of the earnings distribution has worsened over the past two decades. This worsening has taken the form of lower relative real wages in the US (and, to a lesser degree, in the UK) and higher relative unemployment rates in many continental European countries. Providing subsidies or payroll tax reductions to low-wage workers is meant to raise firms' demand for these

<sup>58</sup>Firms may not wish to disclose this information in order to preserve the confidentiality of their business strategies.

<sup>59</sup>See, for example, Drèze, Malinvaud, et al. (1994) and Phelps (1994b).

workers, thereby reducing their unemployment rates and raising their take-home pay.<sup>60</sup> It has been suggested that these policy measures be financed through a rise in VAT or the CO<sub>2</sub> tax. Econometric simulations<sup>61</sup> suggest that the expansionary employment effect of a drop in the payroll tax on low-wage earners may substantially outweigh the contractionary effect of a corresponding rise in the VAT.

Since these policies reduce unemployment by reducing employers' labor costs at the bottom of the wage spectrum, their effectiveness does not appear to be very sensitive to the precise underlying cause of the unemployment (in contrast to profit-sharing subsidies). For example, regardless of whether the unemployment is generated by union pressures, efficiency wage considerations, or insider-outsider conflict, a drop in labor costs is bound to raise employment, since it permits firms to substitute labor for capital and enables them to reduce product prices and thereby create more demand.

There are three major factors limiting the effectiveness of these policies: (i) "deadweight" (subsidies or tax reductions received by workers who would have become employed anyway), (ii) "displacement" (incumbent employees displaced by the subsidized new recruits), and (iii) "substitution" (firms that benefit from the policies driving firms that don't benefit out of business). Clearly, the more closely the subsidies and the payroll tax reductions are targetted at the low-wage workers, the smaller the deadweight and substitutions, but the larger the displacement.

Aside from this, a potential drawback of these policies is that, by raising the take-home pay of unskilled workers relative to skilled workers, they reduce the returns to training. Insofar as labor and capital are complementary in production, the resulting fall in human capital acquisition may also lead to a fall in physical capital formation. For this reason, it appears desirable that these policies be supplemented by subsidies to education and training. This additional element, however, would substantially

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<sup>60</sup>The effectiveness of these policies on these variables clearly depends on the elasticity of labor demand. The greater the elasticity, the more the unemployment rates of the low-wage workers will fall and the less their take-home pay will rise.

<sup>61</sup>Such as those reported in Drèze, Malinvaud, et al. (1994).

increase the cost of the intervention. Another drawback is that these policies may encourage excessive creation of unsatisfying, dead-end jobs, providing little potential for advancement. In that event, the unemployment trap would be replaced by the "trap of the working poor". But even in that event, workers would experience a rise in their living standards: since the take-up is voluntary, workers and firms will avail themselves of these policy measures only if it is to their advantage.

#### *6e. Recruitment Subsidies*

The case for recruitment subsidies is similar to that for low-wage subsidies and payroll tax reductions:<sup>62</sup> they bring down labor costs and thereby promote employment and reduce unemployment. In fact, they are better targetted, since they are granted only to new recruits.

Once again, deadweight, displacement and substitution limit the employment effect of recruitment subsidies. Obviously, the deadweight is generally lower for recruitment subsidies than for low-wage subsidies or payroll tax reductions, but the displacement and substitution effects are likely to be higher. In any event, the aggregate employment impact of recruitment subsidies is invariably less than the number of jobs subsidized. Beyond that, their effectiveness is likely to be further reduced by the ways in which they are financed. If employer-based taxes are used for this purpose, these taxes will directly discourage employment; if income taxes are used, they will reduce product demand and thus discourage employment indirectly. In either case, the positive effect of the recruitment subsidies on employment will generally outweigh the negative effect of the taxes.

It is sometimes alleged that another deficiency of recruitment subsidies - ~~once~~ again shared by low-wage subsidies and payroll tax reductions - is that they distort

<sup>62</sup>See, for example, Bishop and Haveman (1979), Kaldor (1936), and Layard and Nickell (1980).

firms' decisions concerning factor composition, encouraging labor at the expense of capital, for example. This matter is quite unlikely to be macroeconomic significance. The inefficiencies resulting from a distorted labor-capital mix are generally insignificant in comparison with the inefficiencies associated with long-term unemployment. Besides, as the efficiency wage, insider-outsider, and union theories suggest, free market activity may often be associated with market failures that give rise to excessive wages and deficient unemployment. In this context, recruitment subsidies may correct for an existing distortion, rather than create a distortion itself.

#### *6f. Benefit Transfers*

The "benefit transfers program" involves giving long-term unemployed people the opportunity to use part of their unemployment benefits to provide vouchers for firms that hire them.<sup>63</sup> The longer a person is unemployed, the greater is the voucher. Larger vouchers are also granted to firms that use them entirely on training. Once the worker finds a job, the voucher gradually falls as the period of employment proceeds.

In this way, benefit transfers are a combination of several different structural policies: the vouchers are equivalent to a special type of recruitment subsidy; the voucher supplement for training is a special type of training subsidy; and the transfer of unemployment benefit amounts to a reform of the unemployment benefit system.

The rationale for benefit transfers are various: (i) They permit people to transfer funds out of a system that discourages employment in order to give firms an incentive to create employment. (ii) They extend the choice sets of workers and firms. Workers offer the vouchers to potential employers when their expected wage offers are sufficiently high; the employers accept the vouchers when the resulting labor costs are sufficiently low. Thus the scheme is used only when both parties are made better off. (iii) The

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<sup>63</sup>See Snower (1994d,e).



scheme is costless to the government, since the vouchers are financed through the foregone unemployment benefits. (iv) It is not inflationary, since the long-term unemployed have no significant effect on wage inflation, and since the voucher reduce labor costs and thereby exert downward pressure on prices. (v) The scheme functions as an automatic stabilizer, since a fall in unemployment reduces the amount spent on unemployment benefits, which in turn reduces the funds available for the employment vouchers. (vi) By providing generous vouchers to firms that use them for training, the scheme gives these firms an incentive to maximize the productivity-enhancing effect of this training. (vii) Finally, the scheme could help overcome regional unemployment problems. Regions of high unemployment would become ones in which a large proportion of the workforce commands training subsidies. This may give firms an incentive to relocate there and give the unemployed people the requisite skills.

Since benefit transfers are voluntary, non-inflationary, costless to the government, and would doubtless increase employment, countries have little, if anything, to lose from adopting them. They therefore appear desirable as a first line of attack against long-term unemployment. Once the employment-creating potential of unemployment benefits has been exploited in this way, further measures may well be necessary to bring European unemployment down to socially acceptable levels.

## **6. Concluding Remark**

It has become a platitude to say that every sensible piece of economic policy advice rests on a reasoned analysis of the underlying policy problem, and every reasoned analysis is based on a theory of how the economy functions. Politicians may believe that their policy proposals rest simply on "common sense"; but if there is any sense underlying this common sense, it exists in the form of a coherent, self-contained theory. As Keynes (1936) put it, "The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly

understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually slaves of some defunct economist."

But given that this is obvious, it is surprising that so little is done to explore the predictive power of a theory, before that theory is used as basis for policy formulation. This survey is a tentative first step towards evaluating unemployment policies in this light.

It goes without saying that such an evaluation alone is not sufficient for the design of unemployment policies but - as we have seen - it can provide a variety of useful insights about where promising policy approaches are to be found. For example, we have examined how differences in labor turnover costs across sectors (e.g. services versus manufacturing) and regions (e.g. the EC versus the US) may help account for differences in levels, variability, duration, persistence, and distribution of unemployment. This analysis suggests that policies to reduce the harmful effects of these labor turnover costs - such as reductions in statutory severance pay, training and recruitment subsidies, benefit transfers, and policies to lower the barriers to the entry of new firms - may have a significant role to play in combatting unemployment. These and the variety of other insights adduced above show why it is important to evaluate unemployment policies through the predictions of the underlying theories.

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