

Background paper for the *World Employment Report 2004*

# **How to Fight Unemployment: Insights From Recent Research**

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## **1. Introduction\***

The fight against unemployment remains one of the top policy priorities in many countries. It is not surprising, then, that the causes of unemployment, the relationship between employment trends and other indicators of macroeconomic performance, and the lessons learned from policies that have been implemented are the most deliberated issues of economic policy research. This paper attempts to take stock of where we stand now. What works? What doesn't? What are the open questions?

The past three decades span a broad range of diverse national labour market experiences. The variation in unemployment data, both across countries and over time, is large. From the viewpoint of empirical research, this is advantageous because it provides ample scope to test competing theories of unemployment and diagnose the crucial elements that separate the poor performers from the job miracles. The interpretation of current events is always conditioned by prevailing theories which, in turn, are continually revised in the light of factual experience. Through this evolutionary process, the perception of the unemployment phenomenon and, with some delay, the public discourse on labour market policies have undergone a profound transformation since 1970 – illustrating the interaction of ideas, events and policies which generally characterize the overall evolution of macroeconomics.

This short paper cannot do full justice to these developments nor to the voluminous recent literature that attempts to assess the implications of the accumulated evidence for unemployment theory and policy. Instead, the present paper uses a very broad brush to describe some major insights of this literature and the general approach to unemployment policy to which these insights point. In doing so, it inevitably remains highly selective with regard to the topics covered and open to objections on its judgments.

Successful policies must be grounded on a clear understanding of the problem they address. Solving the problem invariably means finding and exploiting a robust relationship between cause and effect. But causes come on many levels. For example, proximate causes may appear self-evident on a superficial level, although they frequently hide layers of deeper causes which

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it is necessary to understand in order to deal effectively with the proximate causes. Often, much of what passes for a causal interpretation of unemployment in the public policy discourse turns out to be little more than a tautological statement on closer inspection.<sup>1</sup> However, even statements that have little or no causal information content can be quite useful for the purpose of organizing one's thoughts about the problem at hand. In fact, one such statement is used as an organizing device for this paper. It says that unemployment can be due either to an excess supply of labour or to a failure of the market to match demand and supply properly, or to any combination of the two.

This statement is easily derived from the twin observation that labour supplied by workers to the market is trivially either employed or unemployed and that jobs offered by employers are, just as trivially, either filled by workers or vacant, as Box 1.1 shows:<sup>2</sup>

$$(1) \text{ Labour Supply} \equiv \text{Employment} + \text{Unemployment}$$

$$(2) \text{ Labour Demand} \equiv \text{Employment} + \text{Vacancies}$$

Thus, employment can be alternatively defined as labour supply minus unemployment or as labour demand minus vacancies:

$$(3) \text{ Employment} \equiv \text{Labour Supply} - \text{Unemployment} \equiv \text{Labour Demand} - \text{Vacancies}$$

Solving the second equality for unemployment, thus:

$$(4) \text{ Unemployment} \equiv (\text{Labour Supply} - \text{Labour Demand}) + \text{Vacancies}$$

Unemployment thus appears as the sum of a market disequilibrium and a structural or mismatch component (job-seeking workers not placed in vacant jobs). Each of these 'causes' draws our attention to some underlying factors that are potentially responsible for unemployment and thereby suggests a corresponding set of policy measures. Figure 1.1 illustrates the logical association of alleged 'causes' and suggested remedies, all of which will

<sup>1</sup> A typical example is a statement such as "Unemployment rose because the growth rate of the economy did not keep up with productivity improvements." For more on the uses and misuses of identities, see Landmann (2002).

<sup>2</sup> Jobs offered are to be regarded as synonymous with labour demanded.

be briefly considered in subsequent sections of this paper. More specifically, we can distinguish five sets of policies, three of them directly addressing disequilibrium unemployment, one addressing mismatch unemployment and one addressing both.

**Figure 1.1 about here**

### 1. *Aggregate demand management*

Jobs exist because they are needed to produce output. If the number of available jobs (labour demand) falls short of labour supply, ways must be found to make firms willing to produce more goods and services and thereby create new jobs. One time-honored approach to this end is the stimulation of the effective demand for goods and services. This is the Keynesian policy approach which starts from the premise that the critical factor limiting job creation is a lack of effective demand on the goods market. Part 2 explains why confidence in the effectiveness of Keynesian policies has suffered in the past decades, but argues that proper demand management nevertheless remains an important precondition for a good labour market performance.

### 2. *Supply-side policies*

Another set of policies for increasing the number of jobs aims at the ability and willingness of firms to supply goods and services. This requires one or both of two things: stronger employment incentives for firms, by lowering the cost of jobs and by facilitating market access or stronger employment incentives for potential workers (Part 4). The latter in general amounts to a radical reform of the welfare system. When an unemployed worker takes up a job, the incipient taxation of this labour income and the withdrawal of previous benefits must not be allowed to add up to a prohibitive marginal effective taxation of re-employment. Thus, most efforts to increase the number of jobs by removing disincentives on the supply side of the economy involve a reform of labour market regulations or of the welfare state. More recently, however, increasing attention has also been paid to product market imperfections as a source of sluggish job creation (Part 5).

### 3. *Limitation of labour supply*

If the problem is persistent excess supply on the labour market, an obvious place to look for a solution is the effective supply of labour. Measures designed to reduce the effective volume of labour supplied are often said to bring on a 'fairer' distribution of available

jobs. The most common instruments employed to this end are shorter weekly working hours and early retirement. Part 3 explains why this approach – in addition to exacerbating the financial problems of the intergenerational transfer systems caused by demographic trends – is ill-suited for fighting unemployment. As it turns out, the reduction of effective labour supply fails to generate sustainable employment gains for much the same reasons as Keynesian demand stimulus.

#### 4. *Improvement of matching process*

The number of vacancies coexisting with unemployment is an indicator of how well the labour market functions as a matching mechanism. The call for increased matching efficiency directs the spotlight of the policy-maker to the design of active labour market policies, the effectiveness of job placement services and the like. Of course, the incentive effects of transfer systems are relevant here, too (Part 4).

In what follows, it will not be possible to devote more than some brief comments to each of these complex policy areas. Many issues remain far from settled. Nevertheless, it is fair to say that the literature has broadly converged to a common general interpretation of the large variation in unemployment experiences: unemployment is seen as the result of an interaction of shocks and institutions – both of which are subject to considerable variation across time and space.<sup>3</sup> Some shocks, such as productivity shocks or the emergence of new competitors on world markets, must be regarded as largely exogenous to policy. Other shocks are clearly policy-induced (changes in labour taxes, interest rates or regulatory frameworks). Institutions are entirely policy-made, including the very rules of the policy-making process itself.

Unemployment started its long-term rise in many countries around the mid-1970s. At that time, a great deal of uncertainty surrounded the causes of the deteriorating labour market performance. The standard Keynesian remedies began falling into disfavour but no coherent policy framework was ready to take their place. Today, the shocks-cum-institutions approach has substantially advanced our understanding of persistent high unemployment. It is fair to say that we broadly understand which shocks and which institutions make for combinations that are particularly harmful to employment. On a general level, at least, policy conclusions are tz1

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<sup>3</sup> Representative studies along these lines include, among others, Blanchard/Wolfers (2000), Nickell/Layard (1999), Bertola/Blau/Kahn (2001), Chen/Snowder/Zoega (2002) and Ljungqvist/Sargent (2002).

quite straightforward: Avoid pernicious policy-made shocks and design institutions so as to keep labour markets operating smoothly and capable of digesting inevitable exogenous shocks without translating them into higher unemployment.

Perhaps the major unresolved puzzle at this point is why some countries have been successful in maintaining or returning to employment-friendly policies while others have not. As the paper will argue in conclusion (in Part 6), this puzzle is almost entirely a political-economy issue. Strong institutional reforms inevitably hurt powerful interests which benefit from the status quo. Putting such reforms into practice involves the difficult task of building and mobilizing a majority for the requisite political decisions.

## **2. Aggregate demand management**

Modern thinking about the determination of employment began with the Great Depression of the 1930s and the *General Theory of Employment, Interest, and Money* by John Maynard Keynes (1936) who was the first to give a coherent account of how the instability of effective aggregate demand for goods and services can derail a market economy and cause persistent unemployment. Keynes and Keynesian economics have been associated with the case for an active counter-cyclical management of aggregate demand ever since. Whenever a downturn of economic activity threatened to lower the rate of resource utilization and thus to increase unemployment, the Keynesian doctrine called for monetary or fiscal policy to step in and provide the demand stimulus necessary to keep labour demand near full employment. Conversely, when aggregate demand exceeded potential output, policy was supposed to be tightened so as to prevent inflationary pressure.

It took a while for this doctrine to become part of the mainstream, but it was none the less often given credit for limiting the volatility of output and employment which in most industrial countries was indeed noticeably lower after World War II than in earlier periods.<sup>4</sup> Dissatisfaction with Keynesian prescriptions began to set in among policy-makers when unemployment appeared jointly with high inflation and when expansionary policies ignited inflation at levels of activity that were thought to fall short of the full employment mark by a

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<sup>4</sup> See e.g. Tobin (1980), p. 47-48.

large margin. Despite the view of early Keynesians, inflation and unemployment are neither the mutually exclusive maladies that appear as the economy deviates from full employment in one direction or the other. Nor are they linked by a stable trade-off function as the famous Phillips curve seemed to suggest. Rather, as Edmund Phelps (1967) and Milton Friedman (1968) first pointed out, there is a certain positive equilibrium level of unemployment, dubbed the *natural rate of unemployment* by Friedman, below which unemployment cannot be pushed for long without setting off ever-accelerating inflation.

More recently, this equilibrium concept came to be referred to as the *NAIRU* (non-accelerating-inflation rate of unemployment). The NAIRU is best described as a condition for an equilibrium between accelerating and decelerating forces acting upon the wage-price spiral. More precisely, the NAIRU is the level to which the unemployment rate must rise in order to make the competing income claims of wage-setters and price-setters consistent with actual disposable income.<sup>5</sup>

The limitations of demand policy do not result from any failure to affect employment, but from the necessity to turn the heat down as soon as inflation threatens to spiral out of control. This is how most post-war business upswings came to an end. In the final analysis, therefore, demand management cannot do anything much about the level of equilibrium unemployment, but is limited to preventing the emergence of disequilibrium unemployment. Throughout the OECD area, wherever unemployment has followed an upward trend over the past three decades, the increase is almost entirely due to an increase in equilibrium unemployment rather than to a widening gap between actual and equilibrium unemployment. Otherwise, high unemployment economies would be subject to intense disinflationary pressure, which for the most part they are not. Indeed, OECD estimates of equilibrium unemployment rates for 2000 were generally quite close to actual unemployment.<sup>6</sup>

The question that is crucial for the design of successful unemployment policies, therefore, is what has caused the rise of equilibrium unemployment. A widely held presumption, consistent with a host of more detailed explanations, is that the principle of Keynesian full-employment policy became a victim of its own promise. As aggregate demand management came to be

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<sup>5</sup> A detailed and authoritative exposition of this wage-setting/price-setting framework for the determination of equilibrium unemployment is provided by Layard et al. (1991); for a brief introduction, see Landmann (2002), Part II.

regarded as the guarantor of full employment, fundamental conditions for the efficient operation of the labour market were increasingly neglected in other domains of economic policy, notably in the design of social policies and in labour legislation.

Clearly, lowering equilibrium unemployment requires measures other than aggregate demand policy – measures that address the determinants of the NAIRU. Of the many policies proposed and tried, each is designed to affect unemployment in some particular way. What the theory of equilibrium unemployment tells us is that there is really just one test any policy must pass. Whatever its particular point of impact is, an unemployment policy can be effective only to the extent that it lowers the inflationary pressure associated with any given increase in employment. In view of the dominant weight of wages in aggregate factor costs, this requirement is tantamount to containing wage pressure. As central banks everywhere are firmly committed to keeping inflation at low levels, high employment can only be sustained if nominal wage increases can be kept roughly in line with productivity growth by other means than through the disciplining influence of high unemployment. Policies that do not help meet this condition are of little use in the fight against unemployment.

Although these considerations appear to downgrade demand policy, the proper monetary and fiscal management of aggregate demand remains important for the labour market performance of a market economy. After all, to emphasize the importance of the determinants of equilibrium unemployment is not to deny the close relationship between demand-driven fluctuations of output and employment, as epitomized by Okun's law. It is hard to find strong, sustained expansions of employment that have not been associated with vigorous growth of effective demand for goods and services. True, employment tends to lag behind output over the business cycle – as reflected in the strongly pro-cyclical behaviour of labour productivity. Early in a recovery, firms mobilize the latent productivity potential of their existing workforce instead of creating many new jobs. Such episodes of above-average productivity growth regularly give rise to concerns about a 'jobless recovery'. In the United States, the recoveries of the economy in 1991-92 and in 2003 illustrate the point well. While there is much

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<sup>6</sup> See OECD (2000), Chapter V. Needless to say, the worldwide recession 2001-03 has subsequently added to disequilibrium unemployment.



evidence that the employment-output link is far from mechanical,<sup>7</sup> it is a close link nevertheless.

More specifically, there are at least three reasons why the management of aggregate demand has an important role to play in a full-employment strategy:

1. Because of the employment-output link, strong adverse demand shocks do lead to high unemployment, possibly for an extended period of time (Nickell, 2002). The experience of Finland in the early 1990s is a case in point. So is Japan's persistent deflationary recession. Thus, preventing or counteracting such shocks must be high on the priority list.
2. The case for preventing major demand-side disturbances is further strengthened by the evidence for the role played by hysteresis in high unemployment countries. Hysteresis means that the recent history of actual unemployment affects equilibrium unemployment. Cyclical unemployment, initially caused by an episode of weak aggregate demand, thus can turn into a permanent shortfall of output and employment if it persists long enough for its wage-restraining influence to lose force – which can happen for a number of reasons such as the build-up of long-term unemployment. On the empirical level, Ball (1997) has found a strong relationship between the change in the NAIRU and the size of disinflation across OECD countries. Since disinflation is typically associated with increased unemployment, this observation is consistent with the path-dependence of unemployment.
3. Most supply-side measures aimed at lowering equilibrium unemployment, do little to stimulate actual employment. If effective, they create the leeway for employment to expand without risking renewed inflation. But for an economy actually to realize this expanded potential for output and employment growth, demand-side support is indispensable. Without that support, the fall in equilibrium unemployment generates disinflationary or even deflationary pressure which feeds back to actual unemployment indirectly and weakly at best. In the worst case, deflation can spiral out of control and

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<sup>7</sup> In a widely cited comparative study of U.S. recoveries, Groshen and Potter (2003) find that the response of employment to the acceleration of output growth early in the recovery has become increasingly sluggish. They explain this finding with the observation that job losses during the 2001 recession, in contrast to earlier recessions, reflect permanent job relocations more often than temporary lay-offs.

further destabilize output and employment.<sup>8</sup> This is why the doctrine of equilibrium unemployment must not be misconstrued as implying that demand policies are either superfluous or ineffective. As Blanchard et al. (1986) put it long ago, the revitalization of growth and employment requires a ‘two-handed approach’, judiciously combining supply-side and demand-side measures.<sup>9</sup>

### **3. Shorter working hours and early retirement**

If unemployment persists because labour demand fails to catch up with labour supply, why not solve the problem by shrinking the latter? Would not a reduction of hours worked per person spread the available work more thinly among a larger number of workers and thereby yield the double benefit of distributional fairness and higher employment?

Clearly, the reduction of working times is a distinct long-term trend common to all growing economies. As living standards rise, people want more than just higher incomes. They also want more leisure – and they get it in the form of a shorter workweek, longer vacations, or earlier retirement. This has gone on for at least two centuries. More recently, however, there is strong evidence that policy-makers have made efforts to accelerate this trend in response to high unemployment, particularly so in countries with a poor labour market performance. Trade unions have long led the fight for a shorter workweek, either within the framework of collective wage bargaining agreements with employers or by lobbying for corresponding legislation in the political arena. A well-known recent example is the move to the 35-hour week in France.

In the same way, the fall of participation rates among older workers, experienced by all OECD countries over the past three decades, is clearly correlated with national unemployment trends: the higher the increase in unemployment, the higher the increase in early retirement (Layard et al., 1991, Chapter 10). Moreover, there is evidence that this correlation is the result of deliberate political action against unemployment. As Herbertsson (2001) has shown, the participation rates of male workers in the 55-64 age group is negatively related to both

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<sup>8</sup> The point that downward wage and price flexibility can be counterproductive for employment was forcefully made, among others, by Tobin (1980) who built on earlier insights by Keynes (1936) and Fisher (1933) about the effects of deflation during the Great Depression.

<sup>9</sup> A similar view was put forward more recently by Modigliani et al. (1998).

aggregate unemployment and to the unemployment rate in this age group. Interestingly, an equally strong inverse relationship is found between the participation rates of older workers and youth unemployment. This relationship appears to reflect the widely held belief that early retirement alleviates youth unemployment as older workers leave their jobs to make room for the young.

At the very least, the data do not contradict the presumption that policy-makers have actively promoted the reduction of working hours as an element of their strategy against unemployment. What was the basis of the belief that this strategy would work? Apparently, the underlying reasoning consists of little more than a truism, “If a given number of employees, each working a given number of hours, can produce some given output, an extra 10 per cent of workers can be employed in the production of that same output if all work 10 per cent less.” To conclude from this, however, that shorter working hours lead to lower unemployment is an error in logic. Statements about cause and effect cannot be derived from applying truisms unless additional, empirically falsifiable restrictions are imposed on the variables involved.<sup>10</sup> While the above truism is (approximately) correct as a matter of pure algebra, the belief that aggregate employment would expand by more or less the amount by which individual working hours are cut is based on the premise that the volume of work to be done in the economy is somehow fixed. This mistaken belief is commonly known as the ‘lump-of-labour fallacy’.<sup>11</sup>

As pointed out above, an anti-unemployment strategy can promise sustainable results only to the extent that it tackles the causes of equilibrium unemployment. Is there any reason to think that working hours affect the wage-setting or price-setting behaviour which determines the NAIRU? No. All tests for working-hour effects in empirical wage-setting equations have come out negative (e.g. Layard et al., 1991). Thus, even if a cut in working hours led to additional jobs on impact – which can be questioned for a number of reasons – the wage pressure created by the improved state of the labour market would annihilate such employment gains in a short time. On the contrary, if incumbent workers resist the income reduction implied by shorter hours, wage pressure would conceivably increase and thereby push the NAIRU even higher.

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<sup>10</sup> Another truism frequently misused in a similar way is the ‘fundamental identity’ linking output, employment, and productivity (see Landmann, 2004).

This has led some observers to conclude that a reduction of working hours can succeed in lowering unemployment if they are engineered in a cost-neutral way, i.e. without any compensation of income losses for incumbent workers. But this line of argument ignores the inherently endogenous character of wage determination on the labour market. Even if a deal were struck between employers and unions to cut hours without any compensating increases of hourly wages, the fundamental relationship between the state of the labour market and wage determination would still make itself felt in subsequent wage bargaining rounds. Any agreements concluded at some point in the past are bound eventually to become irrelevant.

The bottom line is that the reduction of effective labour supply does not work as a strategy against unemployment. By the same token, it does not even work as a cosmetic device to keep openly visible unemployment low. The promotion of early retirement, in particular, was frequently motivated by resignation in the face of high unemployment among older workers and by the desire to cushion their exit from the labour market. While promising an easy way out of a seemingly untractable problem, such cosmetic operations in fact have made the problem worse. If workers who are willing and able to work are removed from the labour market, their employment prospects are no longer taken into consideration by wage-setters. This creates the wage pressure that prevents the NAIRU from falling. Additional wage pressure arises as the cost of generous early retirement programmes is shifted forward onto payroll taxes.

Low participation rates and short working hours have come to be recognized as a serious problem for mature economies facing increasing burdens on their intergenerational transfer systems due to their ageing populations. But past reductions of effective labour supply which have been engineered in the mistaken belief that they would alleviate unemployment prove hard to reverse. In part, this is due to the continuing influence of those mistaken beliefs – for example, when politicians argue that it does not make sense to lengthen hours or raise the effective retirement age as long as the economy is not even able to employ the existing labour supply.

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<sup>11</sup> Such simple-minded calculations of “how many jobs could be created” by cutting working hours sometimes make an allowance for induced productivity effects. But this does not make them any less fallacious.

#### ***4. Reforming labour market institutions***

Recent research has singled out labour market institutions as the dominant source of differences in national unemployment experiences. The major institutional parameters that were found to be important include the system of unemployment benefits, the scope and design of active labour market policies, the role of unions, the system of collective wage bargaining, minimum wages, the extent of employment protection, and the taxation of labour.<sup>12</sup> Changes in these parameters affect the efficiency of the matching process, the incentives for firms to create jobs and the incentives for the unemployed to accept jobs (see boxes 3 to 5 in Figure 1.1).

The efficiency of the matching process can be roughly expressed by the aggregate vacancy-unemployment relation, the so-called Beveridge curve. Any improvement of the matching process induces an inward shift of that relation and is usually associated with a fall in both unemployment and vacancies. Changes that act upon the excess supply of labour, in turn, induce movements of unemployment and vacancies along the Beveridge curve – that is, in opposite directions. In practice, these two types of changes tend to occur jointly. They both have explanatory power for the major variations of unemployment in the OECD area.<sup>13</sup> Moreover, it will become clear below that a number of institutional parameters affect both the operation of the matching process and the level of excess supply in the labour market in ways that are hard to separate.

##### ***The unemployment benefit system***

All industrial countries have a system of income support in place for persons who are out of work and in need of a wage income. There is a well-established case for the role of the State in providing unemployment insurance.<sup>14</sup> Clearly, the terms under which that insurance is available matters a great deal for the incentives faced by the unemployed. In particular, the intensity of job search and the reservation wages of the unemployed depend on the level of benefits, on the length of time for which they are available, and on the criteria of eligibility. Not surprisingly, then, empirical studies confirm that these features of the benefit system are

<sup>12</sup> See Nickell/Layard (1999), Nickell (2002).

<sup>13</sup> This is illustrated by means of the respective Beveridge curves for the United States and the European Union, see International Monetary Fund (2003), Figure 4.3, p. 133.

important for the equilibrium unemployment level of an economy. In all the countries that have managed to break the upward trend of unemployment and to return to a good labour market performance, a tightening of the benefit system was one of the ingredients to the underlying policy package.<sup>15</sup> The most pernicious combination is a long duration of benefits with soft criteria on job offers the unemployed are required to consider. There is robust evidence that this combination is to be avoided. It prolongs unemployment spells and thereby traps the unemployed in a state of long-term unemployment from which they find it increasingly difficult to escape.

Unemployment benefits and social assistance payments are good examples of institutional parameters that affect unemployment by more than one transmission channel. Scaling down their generosity and tightening eligibility increase the readiness of the unemployed to accept jobs. As a result, the Beveridge curve can be expected to shift inwards. On this account alone, the equilibrium unemployment rate falls. In addition, stronger incentives to accept jobs reduce the reservation wages asked by the unemployed. This entails falling wages in those segments of the labour market in which unemployment is most heavily concentrated. The wage floors implied by the level of transfer payments can destroy the viability of low-wage jobs. But these are the jobs that are needed if unemployment among the unskilled is to fall. Changing incentives on the supply side of the labour market thus becomes a prerequisite for the expansion of labour demand.

Not least because of the effects of unemployment insurance and social assistance on the level and structure of wages, reforms that are designed to make these systems more employment-friendly almost always meet fierce resistance in the political arena. What good does it do, we are asked, to turn recipients of benefits into working poor? The answer is that if wages in the low-wage sector do not secure some politically agreed minimum standard of living, society must be willing to use public funds to top up earnings to the desired level. In practice, this can mean an earned income tax credit or a gradual phasing out of benefits under well-defined conditions when work is taken up by a previously unemployed recipient. Such schemes go some way towards turning a system of subsidizing inactivity into a system encouraging employment and applying correct incentives in a desirable direction.

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<sup>14</sup> See Blanchard (2002) for a brief, but succinct discussion.

<sup>15</sup> Ireland, the United Kingdom, Denmark and the Netherlands are conspicuous examples. See Nickell/van Ours (2000), Tille/Yi (2001), Andersen (2002), van Ours (2002), Pissarides (2002), and Walsh (2002).

Contrary to widely held beliefs, the bottom line of such a policy package is not that society has traded off social equity against a more efficient labour market. More employment means more value added, and a bigger pie means that the distortionary burden on taxpayers can in principle be lightened without lowering living standards at the bottom of the income pyramid. Any such a regime change will meet political resistance, nevertheless, because entitlements to which recipients have grown accustomed must be abolished. Also, widening the wage dispersion at the bottom end of the pay scale invariably has some adverse effects on employed workers earning wages not far above the previous wage floors. This is where unions tend to have their core constituencies and where political resistance is effectively expressed. Nevertheless, as we have seen above, the net reduction of overall wage pressure is a necessary precondition for equilibrium unemployment to fall to a sustainable lower level.

### ***Employment protection legislation***

Legislation that prevents firms from freely adjusting their labour forces as they see fit is another means by which workers' demand for insurance is met. Such employment protection reduces involuntary separations in the event of cyclical downturns, but in turn, it also slows the outflow from unemployment. The net effect on equilibrium unemployment is not clear *a priori*. Empirically, there is no unambiguous evidence either way.<sup>16</sup> It is clear, however, that employment protection, by reducing the rate of labour market turnover, adds to the average duration of unemployment and thus to long-term unemployment. Ljungqvist and Sargent (1998, 2002) make the case that employment protection, because it kept turnover on labour markets low, actually had a beneficial influence on Europe's employment performance in the tranquil times up to the 1960s. Only when the macroeconomic environment became rough, they argue, did the adverse lock-in effects of long-term unemployment really start to bite.

Since there is robust evidence that wage-setting behaviour is adversely influenced by the share of long-term unemployment in total unemployment, it may well be that the main effect of employment protection on equilibrium unemployment comes about in this indirect fashion. Another such indirect channel of causation involves the effect of employment protection on job security, which is also known to increase wage pressure. Both of these indirect effects thus

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<sup>16</sup> See Bentolila/Bertola (1990) or, more recently, Nickell/Layard (1999).

tend to tip the balance towards an adverse net effect of employment protection on equilibrium unemployment.

Again, care should be taken not to throw out the baby with the bathwater. Employment protection legislation was not introduced without a reason. As pointed out by Blanchard and Tirole (2003), if workers are more risk-averse than firms and cannot perfectly self-insure against unemployment, there is a case for making firms internalize the cost of unemployment in their lay-off decisions. Once more, therefore, the issue is not simply how to trade off social insurance against economic efficiency, but to design employment protection in such a way that it fulfils its insurance function with less distortionary side-effects on the job creation capacity of the labour market. The specific reforms advocated by Blanchard and Tirole (2003) call for a link between firms' contribution to unemployment insurance and their lay-off behaviour. Once firms are thus made to feel the costs of lay-offs, there would be correspondingly less need for the judicial apparatus to intervene in the lay-off process.

### *Active labour market policies*

One response to the adverse incentive effects of the benefit system was to call for a shift of emphasis from passive income support to active labour market policies designed to enhance the re-employment chances of the unemployed by developing their skills, providing them with work experience in public employment schemes or actively assisting them in other ways to find a new job as quickly as possible.<sup>17</sup> Indeed, active labour market policy has become an important element of the institutional framework of the labour market in most industrial countries. On the whole, success is mixed, at best. While the evaluation of the various measures taken under the heading of active labour market policy is methodologically tricky in a number of ways, the very least that one would want to know is the extent to which such policies have added to the number of jobs in the regular labour market as opposed to the purely cosmetic effects of shifting people from the ranks of the unemployed to those of programme participants.

To be informative, an analysis of the regular employment effects of active labour market policies must not be confined to possible improvements in the matching process, which are



the obvious purpose of measures such as placement services. Equally important, but often overlooked, are the repercussions on the wage-setting process. Policy-makers face a dilemma: if the use of active labour market policies improves the lot of the unemployed to a sufficient degree, it also improves the fallback position of employed insiders and thus encourages them to attach a lower weight to employment risks in wage negotiations. Calmfors and Lang (1995) regard it as an ‘iron law’ that active labour market policies, to be successful, must not be allowed to cushion the bargaining position of insiders.<sup>18</sup> This condition imposes severe constraints on the design of effective policies: the programmes must not be too attractive to participants financially; they must not be abused as a means to renew expired eligibility for passive income support; they must be targeted; and they should avoid deadweight effects as well as lock-in effects. In practice, these conditions often fail to be met.

In the design of active labour market policies, great care is usually taken to ensure the ‘additionality’ of jobs which are created or subsidized within programmes. The idea is to avoid existing jobs being crowded out by the opportunities created for new entrants. However, this approach ignores the causal mechanisms underlying equilibrium unemployment. To the extent that the unemployed find their access to labour market impeded by barriers of entry that are erected for the sake of protecting existing jobs, employment can only expand if unemployed outsiders are turned into effective competitors on the labour market. By definition, there is no way to achieve this without exposing the insiders to some degree of competition.

On the whole, active labour market policies have often failed to live up to expectations because the conditions for their effectiveness turned out to be a lot more intricate than anticipated. For the most part, these conditions involve incentives. On the one hand, labour market programmes were largely designed to improve the marketability of idle human capital. But in addition to improving the ability of finding work, care must be taken also to strengthen the incentives to do so. On the other hand, active labour market policies must not reinforce the incentives of employed workers to exploit their insider status for real wage gains. In order to avoid this, programmes should not improve the bargaining position of employed workers, but

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<sup>17</sup> A stronger emphasis on active labour market policies was a major pillar of the “Jobs Strategy” which the OECD derived from its comprehensive *Jobs Study* in 1994.

<sup>18</sup> Sweden’s active labour market policies have long been regarded as a model for others to follow. However, Calmfors and Forslund (1991) have found these policies to have a substantial adverse effect on aggregate wage pressure. In fact, the 1990s were a period of disillusionment for the Swedish model.

strengthen the competition for jobs.

### *The structure of wage determination*

In view of the crucial importance of wage determination for the level of equilibrium unemployment, it is not surprising that empirical research has found strong adverse effects on unemployment of institutional parameters which increase wage pressure. Thus, the market power of unions and, in particular, the coverage of collective bargaining outcomes, is typically found to be positively correlated with unemployment. To the extent that wage-setting is coordinated across sectors and that such coordination takes into account the macroeconomic repercussions of sectoral wage settlements, wage pressure is reduced for any given level of union power.<sup>19</sup> Even where union density is limited, legislation extending union wages to non-unionized sectors or provisions banning competition from non-unionized (e.g. foreign) producers in areas such as public procurement can greatly strengthen union power. The implications for the reform of labour market institutions are evident: since unions mainly represent the interests of their employed members rather than those of the labour force at large, reforms must be designed with a view to limiting the ability of unions to exploit their market power at the expense of the re-employment prospects of the unemployed.

### *Interaction effects*

The labour market institutions discussed above account for a sizable part of the cross-country variation in unemployment (Nickell/Layard, 1999; International Monetary Fund, 2003). Moreover, there is clear evidence for strong interaction effects among the various institutional parameters. Such interaction effects imply that comprehensive reforms can achieve more than isolated tinkering with labour market institutions since the latter fails to tap potentially large beneficial policy complementarities (Coe/Snowder, 1997).

To name just one example, the employment-reducing effect of labour taxation is largely conditioned by wage-setting institutions. In a perfectly competitive labour market, a tax on labour would reduce the net (after-tax) demand price of labour and thereby depress the market-clearing level of the net real wage. In view of the well-established fact that the real-

wage elasticity of individual labour supply is not very high on average, the increase in gross wage costs (including the tax burden) to employers would be limited and, therefore, the employment effect of lower net wages would be small. As Daveri and Tabellini (2000) have shown, what makes a high rate of labour taxation so damaging to employment is the market power of unions. When labour is well organized, but poorly coordinated across sectors, it is in a position to shift the burden of taxation onto employers. Further repercussions then involve capital formation. As the profitability of firms falls due to the rise in labour costs, they cut back not only on labour, but also on investment. As a consequence, output, employment and productivity are further depressed, which reinforces the rise in unemployment – but dampens the rise in gross wage costs. Thus, despite the appearance of the tax burden being shifted back onto workers over time, the adverse employment effect persists.<sup>20</sup>

As pointed out above, there is also interaction between labour market institutions and exogenous shocks. On the one hand, institutions play an important role in shaping the employment effects of exogenous shocks. In turn, the development of institutions is influenced by the employment history of an economy and thus by the shocks that occur. The shocks that are commonly considered important for explaining the behaviour of unemployment over time include sudden shifts in the terms of trade and in natural resource prices (Bruno/Sachs, 1985), major changes in labour taxes (as discussed above) and in real interest rates (Blanchard, 2000; Phelps, 1994), decelerations and accelerations of productivity growth (Blanchard, 2000; Ball/Moffitt, 2001),<sup>21</sup> and, last but not least, aggregate demand shocks. All of these shocks amount to shifts in the time path of feasible real wages which are translated into higher unemployment by institutional design features of the labour market favouring *real wage resistance*. The unemployment effects of the shocks differ from country to country due to differences in institutions (Blanchard/Wolfers, 2000).

Interactions between shocks and institutions can involve vicious circles which must be reversed and turned into virtuous circles if equilibrium unemployment is to fall. One such feedback mechanism links the unemployment history with the duration of benefits and the level of social insurance contributions. In many cases, rising unemployment has led the

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<sup>19</sup> See Nickell/Layard (1999) and Nickell (2002).

<sup>20</sup> For an analysis of the interaction between equilibrium unemployment and capital formation, see Landmann/Jerger (1993). Daveri/Tabellini (2000) empirically demonstrate the importance of that interaction in the case of labour taxes.

political process to react by extending benefit duration and raising contribution rates so as to rebalance the books of the transfer systems – which in turn exacerbated the initial rise of unemployment as well as its persistence.

The duration of unemployment benefits appears also to bear considerable weight on the employment effects of demand shocks. As Ball (1997) has demonstrated, the degree of unemployment persistence in the wake of an adverse demand shock strongly depends on benefit duration. He is thus able to explain why similar demand shocks can generate quite different unemployment responses across countries and why labour market distortions – in this case, the incentive effects of excessive benefit duration – contribute relatively little to the time-series variation of unemployment unless they interact with shocks to labour demand. One intriguing implication of these interaction effects is that the elimination of institutional features which have contributed to the rise of unemployment in the past will not be sufficient to bring unemployment back down once it has risen to a higher equilibrium level. In spite of this implication, however, Nickell (2002) finds that favourable and unfavourable changes in the institutional parameters enumerated above do help “to understand why some European countries have been able fully to recover from the unemployment disasters of the early 1980s whereas others have not” (ibid., p. 22).

## ***5. Strengthening competition in product markets***

The natural starting point for any unemployment policy is obviously in the labour market. But the presumption that the causes of labour market problems cannot lie anywhere else is certainly false. As Robert Solow (2000) has pointed out, if you have to fix a flat tyre, it is a poor approach to seek the hole only at the bottom where the tyre is flat. Similarly, unemployment policy should take a broader approach than looking only at the labour market. One of the salient contributions of Keynesian economics was to direct our attention away from the labour market and towards the role of effective demand in the product market. Likewise, recent research within the framework of the institutional approach has gone beyond the labour market and placed increasing emphasis on the regulations and imperfections of product and capital markets and the impact on unemployment of their removal or relaxation.

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<sup>21</sup> The interaction between the employment and productivity growth is discussed in somewhat greater detail in

There are several ways in which the liberalization and deregulation of product and capital markets affect unemployment:

- As hitherto sheltered sectors are exposed to competition, they are under increased pressure to earn competitive rates of return on the capital they invest. This inevitably sets off major reallocations of resources, including labour. Such accelerated structural change places an extra burden on the matching capacity of the labour market. Rigidities impeding the mobility of workers between trades and occupations cause such liberalization shocks to lead to higher unemployment – yet another example for the interaction of shocks and institutions.
- Increased competition on product markets is tantamount to lower mark-ups on marginal cost. Since the wage-price spiral is driven by the mutual mark-up of wages over prices and of prices over wages, the loss of market power by firms reduces inflationary pressure at any given unemployment rate and for any given wage-setting behaviour. As a consequence, the NAIRU falls.
- In addition, wage-setting behaviour is not left untouched by changes in the competitive environment of the product market. The theory of collective bargaining demonstrates that workers can demand (and get) higher wages if the price elasticity of demand faced by firms is low (weak competition) than if it is high (intense competition). After all, the demand for labour is a derived demand and must thus reflect the conditions in the product market. Whatever monopoly rents are earned by firms, unions with market power of their own will appropriate part of those rents. As increased competition makes labour demand more elastic and melts away the monopoly rents, it also forces unions to moderate their wage demands. Thus, inflationary pressure weakens and equilibrium unemployment falls on this account, too.
- Further favourable effects on unemployment emerge if the liberalization of product markets spurs innovation and investment and if this translates into faster productivity growth – as current research suggests (OECD 2002, chap. 7). The acceleration of productivity growth can be expected to nudge down equilibrium unemployment in the

same way as the productivity slowdown of the 1970s and 1980s contributed to its earlier rise (as discussed above).

In an empirical assessment of these effects in its May 2003 *World Economic Outlook*, the International Monetary Fund reports simulations of its Global Economy Model (GEM) which indicate a potentially very large employment response to changes in product market competition. The GEM is a multicountry model in the spirit of the 'new open-economy macroeconomics' with nominal rigidities and imperfect-competition microfoundations (Obstfeld/Rogoff, 1996). In the simulations, the level of competition in euro-area product and labour markets was assumed to approach the level prevailing in the United States. The results are remarkable: the change in labour market flexibility alone would raise euro-area GDP by some 5½ per cent and reduce unemployment by more than 3½ per cent implying a non-negligible productivity effect as a by-product. Somewhat surprisingly, additional effects of the same magnitude are predicted to materialize if competition on euro-area product markets approached the level in the United States as well.

While these numbers perhaps mark the upper end of the range of plausible estimates, the basic message is confirmed: individual country experiences as well as recent cross-country studies confirm that freeing up product markets through the privatization of state enterprises; increased international integration; lower barriers to entry; and the relaxation of cumbersome market regulations (such as shop opening restrictions) can substantially improve the labour market performance of an economy.<sup>22</sup>

## 6. Conclusions

Many things can go wrong in labour markets but there is no single, universally valid prescription for putting matters right. For example, in the United Kingdom of the 1980s, the Thatcher government chose a rather confrontational strategy of institutional reform. Its favourable long-term effects on the functioning of the labour market are rarely disputed. In contrast, the experiences of Ireland and the Netherlands opted for a more corporatist and cooperative approach which was also successful. Other success stories have been brought

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<sup>22</sup> A number of such studies have been conducted by the Research Department of the OECD; see e.g. Nicoletti et al. (2001).

about in yet other ways. But to whatever extent these success stories may differ in historical detail, they all appear to share one feature: sustained wage moderation, as measured by real wage growth relative to the growth rate consistent with technological progress (Blanchard, 2000). This seems to confirm the standard theory of equilibrium unemployment which predicts that institutional reform can achieve a sustainable reduction of unemployment only if it succeeds in reducing the inflationary pressure prevailing at any given unemployment rate.

Reforms of labour market institutions inevitably touch the social safety net. But as we have seen, the point is not to tear apart the safety net for the sake of higher employment. Determining the extent of social protection is an eminently political choice which cannot be prejudiced by economic analysis. What economic analysis can do, however, is to shed light on how any given level of social protection can be provided with minimal repercussions on the level of employment. Two insights are crucial here:

1. Insuring income and/or employment risks is costly. There is no free lunch. Workers must bear the cost of whatever protection they demand. Any attempt to shift the insurance premium onto employers leads to inefficient levels of protection and adds to wage pressure, thus exacerbating unemployment.
2. The design of social insurance must take account of incentives created for workers as well as for the unemployed. Reforms that improve the incentive effects of unemployment benefits and of the welfare system have (in theory) the potential of creating a win-win situation: more efficiently designed systems can deliver more social protection for any given level of employment and/or reduce unemployment at any given level of social protection. In practice, however, any reform will hurt some groups or individuals who benefit from present arrangements. There is no such thing as a conflict-free reform. As Blanchard (2003) so aptly put it: “Rents do not disappear without fights.”

The importance of incentives can hardly be overemphasized. In his recent book *The Elusive Quest for Growth*, William Easterly (2001) tells the tale of five decades of development policy and an equally long history of academic thinking about the means by which poor countries could become rich. He details how one alleged panacea after the other failed because all paid inadequate attention to the incentives of governments, private business, individuals, and even aid donors to behave in ways that run counter to the requirements of successful development. He concludes: “Prosperity happens when all players in the development game

have the right incentives.”<sup>23</sup> Very much the same could be said about the ‘elusive quest’ for full employment: “*Full employment happens when all the players in the labor market game have the right incentives.*”

Persistent high unemployment is the price paid by governments which fail to heed this fundamental principle. Low unemployment materializes where the importance of incentives is kept in mind (or rediscovered). The Keynesian full-employment doctrine ended in tears because it did not take into account the changes in private-sector behaviour implied by a full-employment guarantee underwritten by the government. Nor did it properly consider the incentives of governments to manage aggregate demand in the best interest of macroeconomic stability. In the same vein, simple-minded prescriptions (such as cutting working-hours) ignore the rational response of labour market participants to changes in their opportunities. When labour market institutions and social safety nets were designed in an era of rapid growth and full employment, little thought was given to possible adverse incentive effects that might cause unemployment under less favourable circumstances.

Today, there is little disagreement that low unemployment can be sustained only with appropriate labour market institutions. As pointed out in the present report, this does not mean that the social policy accomplishments of the past decades must all be sacrificed to the requirements of low unemployment. Nor does it mean that fiscal and monetary policies can be conducted without regard to the state of the labour market. In fact, a ‘two-handed approach’, with a proper weight assigned to supportive demand-side policies, may well be the only way to make painful supply-side reforms politically sustainable. Much as the numerous instruments of an orchestra must properly play together to achieve the desired result, the many interactions between social policies, employment policies and demand management require careful attention if the quest for full employment is to succeed rather than end in cacophony. Able conductors are badly needed.

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<sup>23</sup> Easterly (2001), p. 289.



## Bibliography

- Andersen, Torben (2002):** “From Excess to Shortage – Recent Developments in the Danish Labour Market”, paper presented at the CESifo Conference on Unemployment in Europe: Reasons and Remedies (Munich).
- Ball, Lawrence (1997):** “Disinflation and the NAIRU”, in Christina Romer and David Romer (eds.), *Reducing Inflation – Motivation and Strategy*, ‘Studies in Business Cycles’ series, vol. 30, pp.167-185.
- Ball, Laurence and Robert Moffitt (2001):** “Productivity Growth and the Phillips Curve”, in Krueger, Alan B. and Robert M. Solow (eds.), *The Roaring Nineties: Can Full Employment Be Sustained?*, New York: Russell Sage Foundation/The Century Foundation Press, pp. 61-90.
- Bentolila, Samuel and Giuseppe Bertola (1990):** “Firing Costs and Labour Demand: How Bad is Eurosclerosis?” in *Review of Economic Studies*, vol. 57, pp. 381-402.
- Bertola, Giuseppe, Francine Blau and Lawrence Kahn (2001):** “Comparative Analysis of Labor Market Outcomes: Lessons for the United States from International Long-Run Evidence”, in Krueger, Alan B. and Robert M. Solow (eds.), *The Roaring Nineties: Can Full Employment Be Sustained?*, New York: Russell Sage Foundation/The Century Foundation Press, pp. 159-218.
- Blanchard, Olivier (2000):** “The Economics of Unemployment – Shocks, Institutions, and Interactions”, Lionel Robbins Lectures, London School of Economics, Oct.
- Blanchard, Olivier (2002):** “Designing Labor Market Institutions”, unpublished, MIT, Cambridge, Mass.
- Blanchard, Olivier, Rudiger Dornbusch, and Richard Layard (1986):** *Restoring Europe’s Prosperity: Macroeconomic Papers from the Centre for European Policy Studies*, Cambridge, Mass.: MIT Press.
- Blanchard, Olivier and Jean Tirole (2003):** “Contours of Employment Protection Reform”, MIT Department of Economics Working Paper No. 03-35, Nov.

- Blanchard, Olivier and Justin Wolfers (2000):** “The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence” in *The Economic Journal*, vol. 110, pp. C1-C33.
- Bruno, Michael and Jeffrey Sachs (1985):** *Economics of Worldwide Stagflation*, Oxford: Blackwell.
- Calmfors, Lars and Anders Forslund (1991):** “Real-Wage Determination and Labour Market Policies: The Swedish Experience”, in *Economic Journal*, vol. 101, pp. 1130-1148.
- Calmfors, Lars and Harald Lang (1995):** “Macroeconomic Effects of Active Labour Market Programmes in a Union Wage-Setting Model”, in *The Economic Journal*, vol. 105, pp. 601-619.
- Chen, Yu-Fu, Dennis Snower and Gylfi Zoega (2002):** “Labour Market Institutions and Macroeconomic Shocks”, CEPR Discussion Paper No. 3480, Aug.
- Coe, David and Dennis Snower (1997):** “Policy Complementarities: The Case for Fundamental Labor Market Reform”, International Monetary Fund Staff Papers, No. 44, pp. 1-35.
- Daveri, Francesco and Guido Tabellini (2000):** “Unemployment, Growth and Taxation in Industrial Countries”, in *Economic Policy*, vol. 30, Apr., pp. 49-104.
- Easterly, William (2001):** *The Elusive Quest for Growth. Economists’ Adventures and Misadventures in the Tropics*, Cambridge: MIT Press.
- Fisher, Irving (1933):** “The Debt Deflation Theory of Great Depressions”, in *Econometrica*, vol. 1, pp. 337-357.
- Friedman, Milton (1968):** “The Role of Monetary Policy”, in *American Economic Review*, vol. 58, pp. 1-17.
- Groshen, Erica L. and Simon Potter (2003):** “Has Structural Change Contributed to a Jobless Recovery?”, in *Current Issues in Economics and Finance*, vol. 9, no.8, Federal Reserve Bank of New York, Aug.1-7.

- Herbertsson, Tryggvi (2001):** “Shrinking Labour Forces and Early Retirement”, in *CESifo Forum*, vol. 4, winter.
- International Monetary Fund (2003):** “Unemployment and Labor Market Institutions: Why Reforms Pay Off”, in *World Economic Outlook*, Chapter IV, May.
- Keynes, John Maynard (1936):** *The General Theory of Employment, Interest, and Money*, London: MacMillan.
- Landmann, Oliver (2004):** “Employment, Productivity and Output Growth”, background paper for *World Employment Report 2004*, International Labour Organization (ILO, Geneva). Available on CD-ROM, see 2004 World Employment Report. Also published in hard copy as *Employment Sector Working Paper*, No. xxxxx (ILO, Geneva).”
- Landmann, Oliver and Jürgen Jerger (1993):** “Unemployment and the Real Wage Gap: A Reappraisal of the German Experience”, in *Weltwirtschaftliches Archiv*, vol. 129, pp. 689-717.
- Layard, Richard, Stephen Nickell, and Richard Jackman (1991):** *Unemployment – Macroeconomic Performance and the Labour Market*, Oxford: Oxford University Press.
- Ljungqvist, Lars and Thomas J. Sargent (1998):** “The European Unemployment Dilemma”, in *Journal of Political Economy*, vol. 106, pp. 514-550.
- Ljungqvist, Lars and Thomas J. Sargent (2002):** “The European Employment Experience”, CEPR Discussion Paper No. 3543, Aug.
- Modigliani, Franco et al. (1998):** “An Economists’ Manifesto on Unemployment in the European Union”, in *Banca Nazionale del Lavoro Quarterly Review*, vol. 206, pp. 327-361.
- Nickell, Steven (2002):** “A Picture of European Unemployment: Success and Failure”, paper presented at the CESifo Conference on Unemployment in Europe: Reasons and Remedies (Munich).

- Nickell, Steven and Richard Layard (1999):** “Labour Market Institutions and Economic Performance”, in Orley Ashenfelter and David Card (eds.): *Handbook of Labor Economics*, Amsterdam, Oxford:Elsevier, vol. 3C, pp.3029-3084.
- Nickell, Steven and Jan van Ours (2000):** “The Netherlands and the United Kingdom: A European Unemployment Miracle?” *Economic Policy*, vol. 30, Apr., pp. 135-180.
- Nicoletti, Giuseppe et al. (2001):** “Product and Labour Market Interactions in OECD Countries”, OECD Economics Department Working Paper No. 312, Paris.
- Obstfeld, Maurice and Kenneth Rogoff (1996):** *Foundations of International Macroeconomics*, Cambridge, Mass.: MIT Press.
- OECD (1994):** *The OECD Jobs Study: Facts, Analysis, Strategies*, Paris.
- OECD (2000):** *Economic Outlook* No. 68, Dec.
- OECD (20002):** *Economic Outlook* No. 71, June.
- Ours, Jan C. van (2002):** “Rising Unemployment at the Start of the 21<sup>st</sup> Century: Has the Dutch Miracle Come to an End?”, paper presented at the CESifo-Conference on Unemployment in Europe: Reasons and Remedies (Munich).
- Phelps, Edmund S. (1967):** “Phillips Curves, Expectations of Inflation and Optimal Unemployment Over Time”, in *Economica*, vol. 34, 254-81.
- Phelps, Edmund S. (1994):** *Structural Slumps: The modern equilibrium theory of unemployment, interest, and assets*. (In collaboration with Hian Teck Hoon, George Kanaginis, Gylfi Zoega), Cambridge, Mass., London: Harvard University Press.
- Pissarides, Christopher (2002):** “Unemployment in Britain: A European Success Story”, paper presented at the CESifo-Conference on Unemployment in Europe: Reasons and Remedies, Munich.
- Solow, Robert (2000):** “Unemployment in the United States and in Europe: A contrast and the reasons”, CESifo Working Paper No. 231, Munich.

**Tille, Cédric and Kei-Mu Yi (2001):** “Curbing Unemployment in Europe: Are There Lessons from Ireland and the Netherlands?” *Current Issues in Economics and Finance*, *Federal Reserve Bank of New York*, vol. 7, no. 5, pp. 1-6.

**Tobin, James (1980):** *Asset Accumulation and Economic Activity*, Yrjö Jahnsson Lectures, vol. 7, XY/N-1, Oxford:Blackwell.

**Walsh, Brendan (2002):** “When Unemployment Disappears: Ireland in the 1990s”, Paper presented at the CESifo-Conference on Unemployment in Europe: Reasons and Remedies (Munich).

**Figure 1.1: 'Causes' of Unemployment and Suggested Remedies**

