

# DICE REPORT

## Journal for Institutional Comparisons

VOLUME 1, No.2

SUMMER 2003

---

### LABOUR MARKET INSTITUTIONS AND UNEMPLOYMENT

#### Forum

Michèle Belot  
Jan C. Van Ours  
Lars Ljungqvist  
Stephen Nickell  
Ronald Schettkat  
Franz Traxler

---

### EVASION OF VALUE-ADDED TAXES

#### Research Reports

Andrea Gebauer/  
Rüdiger Parsche

### TAXES AND FDI

Andreas Haufler/  
Sven Stöwhase

### DEPRECIATION RULES AND INVESTMENT

Chang Woon Nam/  
Doina Maria Radulescu

---

### WELFARE TO WORK IN THE UK

#### Reform Models

Wolfgang Ochel

---

### LABOUR DISPUTE RULES FISCAL MONITORING PARENTING: A WORK CONSTRAINT WAITING FOR SURGICAL OPERATIONS EDUCATIONAL POLICY PUBLIC DEBT

#### Database

---

### NEW REPORTS ON REGULATIONS CONFERENCES

#### News



The international platform of Ludwig-Maximilians University's  
Center for Economic Studies and the Ifo Institute for Economic Research, Munich

CESifo  DICE Search


[Simple](#) [Advanced](#) [Recent Files](#) [Survey Help](#)

Search  Show results:  in  format, sorted by

Text

Text search initiates searches in document texts as well as the attributes title and comments.

Select the institutional sector or subsector (folder) you want to search. Click on the  images to expand / collapse folders. Selecting no folders initiates searches in all institutional sectors and subsectors.

-  Archives
-  Basic Country Characteristics
-  Capital Market
-  Education
-  Enterprise Environment
-  Health
-  Labour Market
-  Miscellaneous
-  Pensions
-  Public Finance
-  Social Policy

*Visit the DICE Database at  
<http://www.cesifo.de/DICE>*

CESifo DICE Report ISSN 1612-0663

A quarterly journal for institutional comparisons

Publisher and distributor: Ifo Institute for Economic Research e.V.

Poschingerstr. 5, D-81679 Munich, Germany

Telephone ++49 89 9224-0, Telefax ++49 89 9224-1462, e-mail [ifo@ifo.de](mailto:ifo@ifo.de)

Annual subscription rate: €50.00

Editors: Wolfgang Ochel ([ochel@ifo.de](mailto:ochel@ifo.de)), Rigmar Osterkamp ([osterkamp@ifo.de](mailto:osterkamp@ifo.de))

Editor of this issue: Wolfgang Ochel

Copy editing: Anne Heritage

Reproduction permitted only if source is stated and copy is sent to the Ifo Institute

**DICE Database: [www.cesifo.de/DICE](http://www.cesifo.de/DICE)**

## Forum

### LABOUR MARKET INSTITUTIONS AND UNEMPLOYMENT

<b>Interactions between Institutions Matter</b> <i>Michèle Belot and Jan C. Van Ours</i>	3
<b>European Unemployment: Labour Market Institutions and Economic Turbulence</b> <i>Lars Ljungqvist</i>	7
<b>Labour Market Institutions and Unemployment in OECD Countries</b> <i>Stephen Nickell</i>	13
<b>Institutions in the Economic Fitness Landscape: What Impact Do Welfare State Institutions Have on Economic Performance?</b> <i>Ronald Schettkat</i>	27
<b>The Contingency Thesis of Collective Bargaining Institutions</b> <i>Franz Traxler</i>	34

## Research Reports

<b>Evasion of Value-added Taxes in Europe: Ifo Approach to Estimating the Evasion of Value-added Taxes on the Basis of National Accounts Data (NAD)</b> <i>Andrea Gebauer and Rüdiger Parsche</i>	40
<b>Taxes as a Determinant for Foreign Direct Investment in Europe</b> <i>Andreas Haufler and Sven Stöwhase</i>	45
<b>Effects of Tax Depreciation Rules on Firms' Investment Decisions: A Comparison of European Transition Countries</b> <i>Chang Woon Nam and Doina Maria Radulescu</i>	52

## Reform Models

<b>Welfare to Work in the United Kingdom</b> <i>Wolfgang Ochel</i>	56
---	----

## Database

<b>Labour Dispute Rules and Strikes in the European Union</b>	63
<b>Fiscal Monitoring in the Euro-Area</b>	67
<b>Children – An Occupation Constraint for Women</b>	69
<b>Waiting for Surgical Operations</b>	70
<b>Education as a Public Good – Clear Success for Thirty Years of Educational Policy</b>	72
<b>Development of Public Debt in Europe</b>	74

## News

<b>New Reports on Regulations/Conferences</b>	76
---	----



# LABOUR MARKET INSTITUTIONS AND UNEMPLOYMENT

## INTERACTIONS BETWEEN INSTITUTIONS MATTER

MICHÈLE BELOT\*

JAN C. VAN OURS\*\*

One of the most striking labour market developments over the past decade is the huge decline in unemployment in the Netherlands. Whereas in the early 1980s the Dutch unemployment rate was as high as 12% and in the early 1990s it was still as high as 8%, it fell to 2% in the early 21st century. There are several explanations for this development. According to Van Ours (2003), the decline in unemployment has to do with wage moderation, restructuring of the social security and part-time labour. So changes in labour market institutions are responsible for the improvement in the functioning of the Dutch labour market. In other OECD countries unemployment has gone down substantially as well. As Table 1 shows, since the early 1980s also in Denmark, Ireland, the UK and the US unemployment has fallen considerably. Table 1 also shows that in Finland, France, Sweden and Switzerland unemployment has gone up substantially over the period 1983 to 2000.

One of the issues in the policy debate is whether and, if so, to what extent changes in labour market

institutions are responsible for these differences in the fluctuation of the unemployment rate across OECD countries. As we will discuss in more detail below, research indicates that changes in labour market institutions can bring unemployment down.

A further issue in the policy debate is whether countries can design a reform for these institutions. Here, the answer is less clear. Even in a successful country like the Netherlands it is not clear that the policy instruments that brought the success were based on a clever design (Visser and Hemerijck 1997). Only with hindsight was there a Dutch model. So, countries can learn from each other, but as Freeman (1998) stresses, countries cannot just borrow some features from successful countries and expect the unemployment rate to decline since a particular institutional feature may perform differently depending on the overall institutional framework. In other words, the effect of a system of institutions is different from the sum of the effects of the individual institutions. This is indeed what our contribution is to the literature on unemployment and labour market institutions (Belot and Van Ours 1999; 2001). Instead of investigating the effects of institutions individually we investigated the effects of interactions between labour market institutions.

### Overview of the literature

Over the past decades there has been a growing interest in the role of institutional labour market rigidities, which were more prevalent in Europe than in the US. The labour market institutions that are usually considered in the literature are regulations that influence more or less directly the functioning of the labour market. Hence, there has been interest in taxes levied on labour, in labour standards and employment protection legislation, in trade unions, in wage bargaining systems, in minimum wage(s), in benefit systems,

\* Michèle Belot is researcher at the Netherlands Bureau of Economic Policy Analysis (CPB), The Hague.

\*\* Jan C. Van Ours is Professor of Labour Economics, Department of Economics, Tilburg University.



**Table 1**  
Changes in unemployment rates, 1983–2000

Group	Unemployment	Countries
1	Rise of 4% or more	Finland, France, Sweden, Switzerland
2	Rise of 0-4%	Austria, Germany, Italy, Japan, Norway, New Zealand
3	Fall of 0-4%	Australia, Belgium, Canada
4	Fall of 4% or more	Denmark, Ireland, Netherlands, UK, US

in active labour market policies, in education policies and in barriers to geographical mobility. The choice is of course to some extent arbitrary as some of these institutions (such as the tax system) concern also people who are not in the labour force and the list can be extended to include, for example, product market regulations.

The literature draws important lessons concerning the role of institutional rigidities on economic performance but some puzzles persist. There are many studies concentrating on some particular institutions but only a few studies look at a more complete picture of the institutional framework. A first series of studies analyse the direct effects of institutions on indicators such as the unemployment rate, the employment rate and the growth rate of the national product. (For an overview see Nickell and Layard 1999.)

At the start the analyses were based on cross-sectional information showing that tax rates, replacement rates, benefit duration, union density and union coverage had a positive effect on unemployment (Layard et al. 1991). After that a number of studies were published that extended the analysis in various directions. Scarpetta (1996) uses yearly data covering the period 1983 to 93. The explanatory variable is the structural unemployment rate<sup>1</sup> as computed by the OECD. Scarpetta first looks at structural determinants of the unemployment rate and then, at the role that labour market policies and institutional factors play in determining the persistence of unemployment. The conclusion is that institutions matter both for the determination of the structural unemployment rate and for the speed of labour market adjustments. Scarpetta finds different results than previous ones for labour taxes (no significant effect) and employment protection legislation (significant positive effect).

Daveri and Tabellini (1997) look at complementarities between labour taxes and the structure of collective bargaining systems. Their analysis is based on data for fourteen OECD countries over the period 1965 to 91. They find that labour taxes have a larger negative effect on unemployment in countries with strong unions. They also show that decentralised and centralised countries are performing better, irrespective of the level of labour taxes.

<sup>1</sup> Defined as the non-accelerating inflation rate of unemployment.

Elmeskov, Martin and Scarpetta (1998) extend the previous analysis by considering a large number of countries, taking the recent institutional developments into account (in particular, the development of collective bargaining structures and of employment protection legislation) and testing for the existence of interactions between policies and/or institutional factors. They conclude that the tightening of eligibility conditions and the cut in unemployment benefits, as well as the relaxation of the regulation on fixed term contracts may have played a major role in the success of some OECD countries in reducing their unemployment rate. Furthermore, assuming that in countries with a medium degree of centralisation (negotiations mainly taking place at the industry level) coordination among actors might be particularly crucial, they upgrade countries with a medium level of centralisation but a high degree of coordination. They show that the tax wedge and employment protection have a stronger effect in countries with an intermediary level of centralization. Also, unemployment benefits have a larger effect in countries with relatively high levels of expenditures on active labour market policies.

Blanchard and Wolfers (2000) use data based on twenty OECD countries and eight five-year periods, from 1960–64 to 1995. They test for the effects of institutions, shocks (in total factor productivity, real interest rate and labour demand shifts) and interactions between institutions and shocks on the unemployment rate. They find that indeed the economic shocks<sup>2</sup> have a larger positive effect on unemployment when the replacement rate is high, the benefit duration is long, the employment protection is strict, the union density is high and the coordination is low.

Nickell, Nunziata and Ochel (2002) show that most of the unemployment histories can be explained by institutional changes. Their study is based on annual data for twenty OECD countries over the period 1961 to 95. Besides estimating the direct effects of labour market institutions, they introduce interaction terms between institutions and economic shocks, defined in a similar way as in Blanchard and Wolfers. They conclude that interactions between shocks and institutions do not add very much to the explanation of unemployment rates.

<sup>2</sup> The economic shocks enter the regression in such a way that their expected theoretical sign on the unemployment rate is positive. Hence, they examine a fall in the total factor productivity, a rise in the real interest rate and a decline in the labour share.

Recent literature suggests that institutional rigidities may even interact with the characteristics of the population (Bertola, Blau and Kahn 2003). Some institutions may have a larger negative effect on some individuals than others.

### Our study

Table 2 gives an overview of changes in labour market institutions averaged over countries that have shown a similar development of unemployment. As in Table 1 four groups of countries are distinguished. From Table 2 it appears that the group of countries with the largest decline in unemployment had on average a decline in tax rates, whereas in the countries of the other groups tax rates increased. In the two groups with a declining unemployment rate, benefit replacement rates did not go up or remained stable whereas in the other countries replacement rates increased. In the groups of countries with a major increase in the unemployment rate, union density hardly declined while it did decline substantially in the other countries. There does not seem to be a big difference between the groups of countries in terms of changes in employment protection and level of bargaining (centralisation).

Thus, based on Table 2 it appears as if changes in taxes, benefits and union bargaining power are the most relevant institutional changes. However, it may be that some combinations of institutional changes are more relevant than others. That is where our studies (Belot and Van Ours 1999; 2001) come in. In stead of investigating the effects of institutions individually we investigated interactions between labour market institutions. In our analysis we use data on seven five-year periods (1960 to 95) and eighteen OECD countries. We find support for the interaction hypothesis. We find

that labour market institutions have a significant effect on unemployment rates only if interaction variables are included. Without the presence of interaction variables, we find that the direct effects of labour market institutions disappear as soon as time and country effects are included in the regression. We investigated three specific interactions: Tax rates and replacement rates, employment protection and bargaining level, union density and bargaining level. We find that in a lot of countries the interaction between tax rates and replacement rates drove the development of their unemployment rates. For other countries changes in the bargaining structure have been more relevant. Hence, employment protection has a significant negative effect on the unemployment rate only in countries where wage bargaining takes place at the level of the firm. The reverse is true for union density. Union density has a positive effect on unemployment rates only when the bargaining system is decentralised. One explanation could be that these institutions have a larger impact on wages in countries where bargaining is decentralised. This means that employment protection would lead to stronger wage moderation in decentralised countries and unions would play a more important role in this type of countries. Given our conclusion that interactions matter, we investigated whether there was an optimal combination of institutional reforms. We calculated for each country what would have happened if they had implemented the institutional reforms of other countries. We find that most of the OECD countries would have had a better labour market performance if they had implemented the reforms made in the Netherlands or in the UK. (See also Nickell and Van Ours 2000.) These successful countries were therefore not only successful because of a favourable combination of institutions and reforms, but also because they implemented institutional changes that were better, irrespective of the initial institutional framework.

**Table 2**

#### Changes in labour market institutions, 1980s–1990s<sup>a)</sup>

Group	Taxes (%)	Replacement rate (%)	Employment protection (%)	Union density (%)	Centralisation index (1–3)
1	4.5	5.0	-3.8	-0.3	-0.4
2	2.2	2.5	-6.3	-6.7	0.1
3	3	0	1	-4	-0.3
4	-0.6	0.2	-5.4	-6.6	-0.2

<sup>a)</sup> Changes from early 1980s to early 1990s; unweighted averages.

### Conclusions

Cross-country studies that relate unemployment rates to labour market institutions have limitations in the sense that institutions do not change frequently, and cross-sectional variation only is insufficient to catch the true effect of institutions. Also, there are many

country specific events that may affect unemployment but which cannot all be taken into account. Part of this criticism also applies to our study. For example, our study neglects the effects of German unification, the large growth of part-time labour in the Netherlands, the big EU subsidies for Ireland and the loss of Eastern Europe exports for Finland. Our main conclusion is that institutions matter and that interactions between institutions are important. In this respect, countries with high unemployment rates could learn from successful countries by imitation. However, there is not just one recipe for a successful performance of the labour markets. Further research is needed to investigate the complexity of the effects of institutional rigidities on economic performance in more detail.

## References

- Belot, M.V.K. and J.C. Van Ours (1999), "Does the Recent Success of Some OECD Countries in Lowering Their Unemployment Rates Lie in the Clever Design of Their Labour Market Reforms?", *CentER Discussion Paper*, Tilburg University.
- Belot, M.V.K. and J.C. Van Ours (2001), "Unemployment and Labour Market Institutions: An Empirical Analysis", *Journal of Japanese and International Economies* 15(4), 403-18.
- Bertola, G., D. Blau and L.M. Kahn (2003), "Labour Market Institutions and Demographic Employment Patterns", *mimeo*.
- Blanchard, O. and J. Wolfers (2000), "The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence", *Economic Journal* 110, 1-33.
- Daveri, F. and G. Tabellini (2000), "Unemployment, Growth and Taxation in Industrial Countries", *Economic Policy: A European Forum* 0(30), 47-88.
- Elmeskov, J., J. Martin and S. Scarpetta (1998), *Key Lessons for Labour Market Reforms: Evidence from OECD Countries' Experiences*, Economic Council of Sweden, IVA, Stockholm.
- Freeman, R.N. (1998), "War of Models: Which Labour Market Institutions for the 21st Century?", *Labor Economics* 5, 1-24.
- Layard, R., S.J. Nickell, and R. Jackman (1991), *Unemployment: Macroeconomic Performance and the Labour Market*, Oxford: Oxford University Press.
- Nickell, S.J. and R. Layard (1999), "Labour Market Institutions and Economic Performance", in: O. Ashenfelter and D. Card (eds), *Handbook of Labour Economics*, Amsterdam: North-Holland, Vol. 3E, 3029-3084.
- Nickell, S.J., L. Nunziata and W. Ochel (2003), *Unemployment in the OECD Since the 1960s: What Do we Know?*, London: Bank of England.
- Nickell, S.J. and J.C. Van Ours (2000), "Falling Unemployment: The Dutch and British Cases", *Economic Policy* 30, 137-80.
- Scarpetta, S. (1996), "Assessing the Role of Labour Market Policies and Institutional Settings on Unemployment: A Cross-Country Study", *OECD Economic Studies* 2(26), 43-82.
- Van Ours, J.C. (2003), "Rising Unemployment at the Start of the 21st Century: Has the Dutch Miracle Come to an End?", *CESifo Discussion Paper* No. 917.
- Visser, J. and A. Hemerijck (1997), *A Dutch Miracle, Job Growth, Welfare Reform and Corporatism in the Netherlands*, Amsterdam: Amsterdam University Press.



## EUROPEAN UNEMPLOYMENT, LABOUR MARKET INSTITUTIONS AND ECONOMIC TURBULENCE

LARS LJUNGQVIST\*

The European unemployment experience during the last 50 years can be divided into a period with low unemployment in the 1950s until the mid-1970s and thereafter a large increase with persistently high unemployment since the 1980s. The challenge to rationalize this experience in terms of labour market institutions is that there were no major changes in those institutions when high European unemployment erupted. As Krugman (1987, p. 68) put it:

The main difficulty with the Eurosclerosis hypothesis is one of timing. Although details can be debated, no strong case exists that Europe's welfare states were much more extensive or intrusive in the 1970s than in the 1960s, and no case at all exists that there was more interference in markets in the 1980s than in the 1970s. Why did a social system that seemed to work extremely well in the 1960s work increasingly badly thereafter?

This article summarizes joint research with Professor Thomas J. Sargent at New York University (Ljungqvist and Sargent 1998, 2002) in which we explore the hypothesis that the outbreak of high European unemployment is connected to observations that the economic environment became more turbulent around the same time. In our analysis, we hold labour market institutions constant and show that the changing economic environment can indeed rationalize the European unemployment experience.

\* Lars Ljungqvist is Professor of Economics at the Stockholm School of Economics.

### Low European unemployment in the 1950s and 1960s

The level of European unemployment as compared to that of the United States has been the subject of much debate for more than half a century but for different reasons. When European unemployment was discussed in the 1950s and 1960s, the central question was why Europe enjoyed such a persistently low level of unemployment. It was then suggested that a possible explanation could be differences in statistical methods and definitions across countries. As a sign of the importance attached to this issue, President John F. Kennedy in the United States appointed a committee to conduct an international comparison of labour market outcomes. The President's Committee to Appraise Employment and Unemployment Statistics (1962) concluded that Europe did in fact have a much lower unemployment rate than the United States so the difference was not merely a statistical artefact. That confirmation of lower unemployment in Europe prompted Deputy Commissioner Robert J. Myers (1964, pp. 172–173) at the Bureau of Labour Statistics in the United States to write:

From 1958 to 1962, when joblessness in [France, former West Germany, Great Britain, Italy and Sweden] was hovering around 1, 2, or 3 per cent, [the U.S.] rate never fell below 5 per cent and averaged 6 per cent.

The difference between [the U.S.] unemployment rate and the average for these European countries was only a little more than 3 percentage points. But, if we could wipe out that difference, it would mean 2 million more jobs, and perhaps \$ 40 to \$ 50 billion in Gross National Product. We can surely be excused for looking enviously at our European friends to see how they do it. We have profited much in the past from exchange of ideas with Europe. It would be short-sighted indeed to ignore Europe's recent success in holding down unemployment.

This puzzle of significantly lower European unemployment during the 1950s and 1960s is often for-



gotten in the current debate that attempts to address the causes to high European unemployment in the last couple of decades. Ironically enough, the labour market institution that can potentially explain low unemployment in the 1950s and 1960s might very well be an institution that is today blamed for causing high European unemployment – policies of employment protection. As we will see, the two contradictory assertions about the effects of employment protection could both prove to be true. In particular, how employment protection affects an economy's unemployment will depend on the amount of “turbulence” in the economic environment.

### **Employment protection decreases unemployment in tranquil economic times**

In theoretical analyses, employment protection has ambiguous effects upon an economy's unemployment level. Employment protection is here taken to mean costs incurred by firms that lay off workers, other than severance payments. On the one hand, such costs make firms reluctant to lay off workers and this tends to reduce unemployment. On the other hand, in anticipation of those future layoff costs, firms become cautious and hesitant to hire workers in the first place, which in turn exerts an upward pressure on unemployment. On balance, numerical simulations of the two main models of unemployment have shown that employment protection generally reduces an economy's unemployment rate.<sup>1</sup>

The intuition for this common finding is straightforward. Since employment protection makes it costly to reallocate labour across firms and industries, there will be less labour mobility in equilibrium. The smaller amount of labour reallocation will then give rise to less “frictional” unemployment, which is associated precisely with workers moving between firms and industries. Hence, employment protection can be said to buy an economy lower unemployment but at the cost of a less efficient labour allocation. In other words, employment protection locks workers into their current employment and results in higher average

job tenures but at the cost of making the economy less agile and responsive to changing economic conditions.

Here one might ask what is wrong with the argument that employment protection should increase unemployment because it becomes too costly for firms to hire workers. The shortcoming of such an argument is that it does not take into account how the wage rate is affected by labour market policies. In equilibrium the wage payments to workers must fall in an economy with costly employment protection since firms would otherwise become unprofitable and go bankrupt. In this sense, there is no free lunch for the employed workers who are enjoying longer job tenures in an economy with employment protection – they pay for it by having to accept lower wages.

These conclusions that policies of employment protection tend to reduce unemployment, but at the cost of a less efficient labour allocation, agree with the insight developed by Deputy Commissioner Myers whom we quoted above. When trying to answer his own query about what explained the low European unemployment rate in the 1950s and 1960s, Myers (1964, pp. 180–181) made the following remark:

One of the differences [between the United States and Europe] lies in our attitude toward layoffs. The typical American employer is not indifferent to the welfare of his work force, but his relationship to his workers is often rather impersonal. The interests of his own employers, the stockholders, tend to make him extremely sensitive to profits and to costs. When business falls off, he soon begins to think of reduction in force ...

In many other industrial countries, specific laws, collective agreements, or vigorous public opinion protect the workers against layoffs except under the most critical circumstances. Despite falling demand, the employer counts on retraining his permanent employees. He is obliged to find work for them to do ...

These arrangements are certainly effective in holding down unemployment. But they involve a very heavy cost. They partly explain the traditionally lower productivity and lower income levels in other countries. Here is something we

<sup>1</sup> The two main models of unemployment are the search model and the matching model. See Alvarez and Veracierto (2001) and Mortensen and Pissarides (1999) for a discussion of layoff costs in the search model and the matching model, respectively. Ljungqvist (2002) offers a critical evaluation of layoff costs in those and other models of the labour market.

can learn from our neighbours, therefore, but are we quite sure we want to learn it? Are there not better ways to reduce unemployment?

An implication of Myers' reasoning which is born out by formal analyses is that an economy with more employment protection should have a lower inflow rate of workers into unemployment. As we will see next, a low inflow rate into unemployment has characterized Europe both before and after the outbreak of high unemployment.

### **Outbreak of high European long-term unemployment**

European unemployment rose sharply at the end of the 1970s and early 1980s, and has since then remained persistently high. Meanwhile the US unemployment rate has continued to fluctuate around its post-World War II average. The increase in European unemployment was not caused by a larger fraction of workers becoming unemployed but rather by a lengthening of the average duration of unemployment spells. As noted by Layard, Nickell and Jackman (1991, p. 4):

The rise in European unemployment has been associated with a massive increase in long-term unemployment. In most European countries the proportion of workers entering unemployment is quite small: it is much lower than in the USA and has risen little. The huge difference is in the duration of unemployment: nearly half of Europe's unemployed have now been out of work for over a year.

As implied by this quote, the increase in the average duration of unemployment spells is very unevenly distributed among the unemployed in Europe. The group of long-term unemployed workers with spells of 12 months or more constitutes a significant share of total unemployment at any point in time. Since the long-term unemployed by definition remain unemployed for an extended period of time, they also account for a disproportionate share of the increase in the average length of unemployment spells. In contrast, many of the short-term unemployed in the statistics "change names" between quarters and most workers actually experience relatively short unemployment spells when transitioning between jobs in Europe.

Since the European unemployment problem is synonymous with long-term unemployment, it is understandable that long-term unemployment and its consequences are a major policy concern in Europe. At the same time we know surprisingly little about the long-term unemployed and their circumstances. Machin and Manning (1999) provide an overview of what is known in the Handbook of Labour Economics. The picture that emerges is that the long-term unemployed workers in Europe today are diverse. However, there are some discernible patterns and a lack of others when it comes to the incidence of long-term unemployment (LTU) in various groups of unemployed workers, as noted by Machin and Manning (1999, p. 3093):

In all countries there is a higher incidence of LTU among older workers and a lower rate among young workers ...

Differences in the incidence of LTU by education are less marked. Most countries seem to have a higher incidence among less-educated but the differences are often small.

Another pattern during the 1980s, as observed by the OECD (1992, p. 67), is that "former manufacturing workers tend to be overrepresented among the long-term unemployed, reflecting the impact of structural adjustment in industry".

Today's problem of long-term unemployment stands in sharp contrast to the situation in the 1950s and 1960s. It is difficult to find any writings expressing concern about long-term unemployment during that time. One exception is the work by Adrian Sinfield (1968) who tried to bring attention to the plight of long-term unemployed workers. But as Sinfield himself suggested, the lack of interest from policy makers then was probably due to the very small number of long-term unemployed. Defining "long-term" as six months and over, Sinfield concluded that long-term unemployment during the 1960s typically affected half a percent of a country's labour force. In countries such as former West Germany and the Scandinavian countries, it was less than two tenths of a percent. However, Sinfield did document significant long-term unemployment in the 1960s in one country – Belgium. The problem of long-term unemployment that arose in the wake of structural change in Belgium now looms as an omen for what was in store for the rest of Europe.

### Increased economic turbulence starting in the 1970s

It is a widely held notion that the economic environment has become more turbulent in the two last decades. The OECD Jobs Study (1994a, pp. 29-30) sums it up as follows:

In the stable post-World War II economic environment, standards of living in most OECD countries grew rapidly, narrowing the gap with the area's highest per capita income country, the United States. The OECD area's terms of trade evolved favourably; trade and payments systems were progressively liberalised, without major problems; GDP and international trade grew strongly.

In the 1970s, the economic environment became turbulent. The two oil price rises, in 1973/74 and 1979/80, imparted major terms-of-trade shocks, each of the order of 2% of OECD-area GDP, and each sending large relative price changes through all OECD economies. Exchange rates became volatile after the breakdown of the Bretton Woods system of fixed exchange rates. Then there came, mainly in the 1980s, waves of financial-market liberalisation and product market deregulation which greatly enhanced the potential efficiency of OECD economies, and also accelerated the pace of change. All these developments challenged the capacity of economies and societies to adapt. At the same time, the need to adapt was heightened by pervasive technological change, especially as the new information technologies appeared; and by the trend towards globalisation.

Supporting the notion of a more turbulent economic environment is the now well documented finding of increased labour earnings instability for individual workers in the United States. Katz and Autor (1999, p. 1495) summarize the state of knowledge in the Handbook of Labour Economics:

A consistent finding across studies and data sets is that large increases in both the permanent and transitory components of earning variation have contributed to the rise in cross-section earnings inequality in the United States from the late 1970s to early 1990s. The increase in the overall permanent component consists of both the sharp

rise in returns to education and a large increase in the apparent returns to other persistent (unmeasured) worker attributes. The rise in cross-sectional residual inequality for males (controlling for experience and education) in the 1980s seems to consist of approximately equal increases in the permanent and transitory factors.

Another line of empirical inquiry that addresses economic turbulence in labour markets is the research on displaced workers, individuals with established work histories who have involuntarily separated from their jobs. Studies such as Jacobson, LaLonde and Sullivan (1993) and Schoeni and Dardia (1996) find substantial long-run earnings losses of 17 to 25 percent for displaced workers in the United States. European studies of displaced workers have only begun to appear. A common finding seems to be that earnings losses and reemployment probabilities of displaced workers are both smaller in Europe than in the United States. For Germany, Burda and Mertens (2001) remark:

A central finding is that German workers displaced in 1986 and subsequently reemployed experienced significantly less wage growth loss than their counterparts in the United States. ...while wage growth for displaced workers in the lowest quartile is marginally higher in comparison with other low wage workers, high wage workers in the upper three quartiles exhibit average losses of around 17%. While the latter figure is comparable to the wage losses estimated in the US, the bulk of displacement in Germany occurs in the lower segment of the wage distribution.

Could it really be the case that fewer are displaced in Germany and have lower wage losses? This apparent "win-win" impression is deceptive, especially when one considers reemployment probabilities, for those who are long-term unemployed after displacement. As only around 80% of all displaced workers are observed in socially insured employment even 4 years afterwards, it seems that lower displacement wage losses in Germany come at the cost of lower reemployment probabilities, raising the issue of the distribution of the burden of unemployment and adjustment. In this sense, the hypothesis put forward by Ljungqvist and Sargent (1998) seems to receive support at the microeconomic level.

We now turn to our explanation of the European unemployment experience based upon the analysis in Ljungqvist and Sargent (1998), and its extension in Ljungqvist and Sargent (2002).

### Labour market institutions in turbulent economic times

As discussed above Europe's low unemployment in the 1950s and 1960s can be attributed to various forms of employment protection that had the effect of lowering frictional unemployment. These layoff costs can therefore explain why Europe had such low unemployment in spite of its generous unemployment benefits. It resolves the puzzle pointed out by OECD (1994b, chapter 8) that earlier empirical studies had found a negative cross-country correlation between benefit levels and aggregate unemployment in the 1960s and early 1970s. When including more recent data, the same OECD study concludes that unemployment rates do actually increase in response to higher benefits but only after long lags, in some cases 10 to 20 years. Our analysis suggests that these lags are purely coincidental, and that the real explanation for persistently higher European unemployment from the 1980s is to be found in a more turbulent economic environment.

In our model, unemployment benefits with generous replacement rates are not much of a problem in tranquil times when laid off workers can find new jobs with pay comparable to previous earnings. But the adverse incentive effects of the entitlement program come unleashed in times of economic turbulence when unlucky workers experience shocks that diminish their earnings potential – old human capital becomes obsolete because of new technologies, firm-specific and industry-specific skills are lost during restructuring in response to increased international competition, union wage premia fall after deregulation, etc. Displaced workers in Europe who found themselves under these circumstances will have a hard time to find new jobs that are acceptable to them. Their earnings potentials have fallen yet they compare any job prospects with their lost earnings since benefits are based upon past earnings via replacement rates. Because of the difficulty in finding acceptable jobs, many displaced workers in our model become discouraged and they reduce their search intensities in the job market which further exacerbate the

adverse effects of generous benefits in turbulent economic times. In contrast, in an economy with stingy rules for unemployment benefits such as in the United States, our model predicts that the unemployed workers “bite the bullet” and search intensively for less well-paying jobs as compared to their lost earnings.

Economic turbulence in our model has hardly any effect on the unemployment rate in the United States while it causes long-term unemployment to explode in Europe. The sharp increase in European unemployment is due to both the direct effect of generous benefits as described and an indirect effect from institutions that reduce the return to work. The indirect effect works as follows. According to our analysis, Europe has had both frictional unemployment and a substantial amount of structural unemployment during the last two decades of economic turbulence. By structural unemployment we mean to refer to those long-term unemployed workers who have to a large degree withdrawn from labour market participation. Employment protection or layoff costs increase the incidence of such transitions into inactivity because these costs reduce the payoff to work and therefore make labour market participation less attractive. In turbulent times, it becomes more important than ever to reform benefit systems and other labour market institutions so to ensure proper incentives to work.

### References

- Alvarez, F. and M. Veracierto (2001), “Severance Payments in an Economy with Frictions”, *Journal of Monetary Economics* 47, 477–98.
- Burda, M.C. and A. Mertens (2001), “Estimating Wage Losses of Displaced Workers in Germany”, *Labour Economics* 8, 15–41.
- Jacobson, L.S., R.J. LaLonde and D.G. Sullivan (1993), “Earnings Losses of Displaced Workers”, *American Economic Review* 83, 685–709.
- Katz, L.F. and D.H. Autor (1999), “Changes in the Wage Structure and Earnings Inequality”, in: O. Ashenfelter and D. Card (eds), *Handbook of Labour Economics* 3A, Amsterdam: Elsevier, 1463–1555.
- Krugman, P.R. (1987), “Slow Growth in Europe: Conceptual Issues”, in: R.Z. Lawrence and C.L. Schultze (eds), *Barriers to European Growth: A Transatlantic View*, Washington D.C.: Brookings Institution.
- Layard, R., S. Nickell and R. Jackman (1991), *Unemployment: Macroeconomic Performance and the Labour Market*, Oxford: Oxford University Press.
- Ljungqvist, L. (2002), “How Do Layoff Costs Affect Employment?”, *Economic Journal* 112, 829–53.
- Ljungqvist, L. and T.J. Sargent (1998), “The European Unemployment Dilemma”, *Journal of Political Economy* 106, 514–50.
- Ljungqvist, L. and T.J. Sargent (2002), “The European Employment Experience”, *CEPR Discussion Paper*, no. 3543.

Machin, S. and A. Manning (1999), "The Causes and Consequences of Longterm Unemployment in Europe", in: O. Ashenfelter and D. Card (eds), *Handbook of Labour Economics 3C*, Amsterdam: Elsevier, 3085–3139.

Mortensen, D.T. and C.A. Pissarides (1999), "Unemployment Responses to 'Skill-Biased' Technology Shocks: The Role of Labour Market Policy", *Economic Journal 109*, 242–65.

Myers, R.J. (1964), "What Can We Learn from European Experience?", in: A.M. Ross (ed), *Unemployment and the American Economy*, New York: John Wiley & Sons, Inc.

OECD (1992), *Employment Outlook*, Paris.

OECD (1994a), *The OECD Jobs Study: Facts, Analysis, Strategies*, Paris.

OECD (1994b), *The OECD Jobs Study: Evidence and Explanations*, Paris.

President's Committee to Appraise Employment and Unemployment Statistics (1962), *Measuring Employment and Unemployment*, Washington D.C.: US Government Printing Office.

Schoeni, R.F. and M. Dardia (1996), "Wage Losses of Displaced Workers in the 1990s", *RAND, Labour and Population Program, Working Paper 96-14*.

Sinfield, A. (1968), "The Long-Term Unemployed: A Comparative Survey", *Employment of Special Groups*, no. 5, OECD, Paris.

## LABOUR MARKET INSTITUTIONS AND UNEMPLOYMENT IN OECD COUNTRIES

STEPHEN NICKELL\*

The average unemployment rate in Europe in 2001 was 7.6 percent. This is higher than in any of the developed countries of the OECD outside Europe.<sup>1</sup> So, in this average sense, there is a European unemployment problem. But averaging in this way is silly. Europe, by which we mean Western Europe, consists of fifteen countries (we omit Luxembourg) with fifteen more or less independent labour markets. As we shall see, it is how these labour markets operate which determines unemployment over the longer term. And by 2002, nine of these fifteen labour markets were operating well enough to produce unemployment rates *lower* than in any of the non-European developed OECD countries including the US. So why is average unemployment in Europe so high? The answer is that unemployment is high in the four largest economies of Continental Western Europe, namely France, Germany, Italy and Spain, henceforward referred to as the Big Four. Exclude these four countries and the famous European unemployment problem more or less disappears.

In what follows, we pursue these issues. In the next section, we discuss how we might explain large secular shifts in unemployment and the circumstances in which changes in the operation of the labour market would provide such an explanation. In Section 2, we summarise some of the evidence on this issue. Finally, in Section 3, we look at what has actually happened to labour market institutions in the last four decades in our

group of OECD countries. Then we see whether we can explain the significant differences in unemployment performance across Europe since the early 1980s.

### Explaining Secular Shifts in Unemployment

Before discussing how we might explain why unemployment changes such a lot over time, we start with a general picture of the period from 1960 presented in Table 1. Note that in this table, the numbers for Germany refer to West Germany and the numbers for Italy have been subject to some correction described in the table. Both these changes have been made to try and ensure some degree of consistency over time. Looking at the table, we see that unemployment was very low in the 1960s with the notable exceptions of Canada, Ireland and the United States. Today, there is only one country with unemployment lower than in the early 1960s, namely Ireland, although Austria, Netherlands, Norway, Switzerland and the US have seen very small increases over what were very low levels in the case of the first four countries. By contrast, the Big Four have unemployment today far in excess of its level in the early 1960s. Like most countries, their unemployment rates took off in the late 1970s and early 1980s but unusually they have remained high ever since. These patterns are the main focus of our interest, so how might this be explained?

### *Some Basic Analysis*

The level of employment, and hence unemployment, is determined by aggregate demand.<sup>2</sup> This is influenced by many factors, mostly outside the direct control of policy makers. Monetary policy is, however, directly controlled by policy makers and has a significant impact on aggregate demand. These days, monetary policy tends to be set in



\* Stephen Nickell is a member of the Bank of England Monetary Policy Committee and the London School of Economics.

<sup>1</sup> Australia, Canada, Japan, New Zealand, US.

<sup>2</sup> There is obviously some short-run slippage between aggregate demand and employment accounted for by variation in inventories and the intensity of work by employees. This is not germane to the main thrust of the argument in the text.

**Table 1****Unemployment (Standardised Rate) %**

	1960-64	1965-72	1973-79	1980-87	1988-95	1996-99	2000-01	Latest data
Australia	2.5	1.9	4.6	7.7	8.7	7.8	6.5	6.5
Austria	1.6	1.4	1.4	3.1	3.6	4.3	3.7	4.1
Belgium	2.3	2.3	5.8	11.2	8.4	9.2	6.8	6.9
Canada	5.5	4.7	6.9	9.7	9.5	8.7	7.0	7.5
Denmark	2.2	1.7	4.1	7.0	8.1	5.3	4.4	4.2
Finland	1.4	2.4	4.1	5.1	9.9	12.2	9.4	8.9
France	1.5	2.3	4.3	8.9	10.5	11.9	9.0	9.2
Germany (W)	0.8	0.8	2.9	6.1	5.6	7.1	6.4	6.8
Ireland	5.1	5.3	7.3	13.8	14.7	8.9	4.0	4.4
Italy	3.5	4.2	4.5	6.7	8.1	9.9	8.4	7.6
Japan	1.4	1.3	1.8	2.5	2.5	3.9	4.9	5.4
Netherlands	0.9	1.7	4.7	10.0	7.2	4.7	2.6	2.8
Norway	2.2	1.7	1.8	2.4	5.2	3.9	3.6	3.9
New Zealand	0.0	0.3	0.7	4.7	8.1	6.8	5.7	5.3
Portugal	2.3	2.5	5.5	7.8	5.4	5.9	4.1	4.4
Spain	2.4	2.7	4.9	17.6	19.6	19.4	13.5	-
Spain*						15.8	11.0	11.2
Sweden	1.2	1.6	1.6	2.3	5.1	8.7	5.5	5.0
Switzerland	0.2	0.0	0.8	1.8	2.8	3.7	2.6	2.6
UK	2.6	3.1	4.8	10.5	8.8	6.9	5.2	5.2
US	5.5	4.3	6.4	7.6	6.1	4.8	4.4	5.7

Note: As far as possible, these numbers correspond to the OECD standardised rates and conform to the ILO definition. The exception here is Italy where we use the US Bureau of Labor Statistics "unemployment rates on US concepts". In particular we use the correction to the OECD standardised rates made by the Bureau prior to 1993. This generates a rate which is 1.6 percentage points below the OECD standardised rate after 1993. The rates referred to in Spain\* refer to recently revised ILO rates. For earlier years we use the data reported in Layard et al. (1991), Table A3. For later years we use OECD Employment Outlook (2002) and UK Employment Trends, published by the UK Department of Education and Employment. The latest data refer to the period between February and September 2002.

order to stabilise inflation at relatively low levels. Suppose, as a result of adverse shocks, aggregate demand is low, unemployment is high and the economy is in a recession. Then monetary policy will be loosened, aggregate demand will recover and unemployment will start falling. At some point in this recovery, the economy will run into labour shortages and inflationary pressure. In anticipation

of inflation moving above target, monetary policy is then tightened. The key issue is how much unemployment remains before labour shortages become excessive and inflation starts to rise. This level of unemployment may be thought of as the equilibrium or sustainable rate at which there is no systematic tendency for inflation to rise or fall, (so it is also called the NAIRU).

**Table 2****Macroeconomic Patterns in the Eurozone, 1994-2002**

	94	95	96	97	98	99	00(i)	00(ii)	00(iii)	
Short-term interest rate (%)	5.3	4.5	3.3	3.3	3.5	3.0	3.5	4.3	4.7	
Final domestic demand contribution to growth (annual %)	1.5	1.7	1.5	1.7	3.1	3.6	3.1	3.5	2.6	
GDP growth (annual %)	2.4	2.2	1.4	2.3	2.9	2.8	3.8	4.2	3.2	
Unemployment Rate (%)	10.9	10.6	10.9	10.9	10.3	9.3	8.7	8.5	8.3	
Inflation (CPI)	2.8	2.6	2.3	1.7	1.2	1.1	2.1	2.1	2.5	
	00(iv)	01(i)	01(ii)	01(iii)	01(iv)	02(i)	02(ii)	02(iii)	02(iv)	03(i)
Short-term interest rate (%)	5.0	4.8	4.6	4.3	3.4	3.4	3.4	3.4	3.1	2.7
Final domestic demand contribution to growth (annual %)	2.2	2.0	1.4	1.1	0.7	0.2	-0.0	0.4	0.7	1.0
GDP growth (annual %)	2.7	2.4	1.5	1.3	0.5	0.4	0.7	0.9	1.3	0.9
Unemployment Rate (%)	8.1	8.0	7.9	8.0	8.1	8.1	8.2	8.3	8.4	8.6
Inflation (CPI)	2.7	2.3	3.1	2.5	2.5	2.5	2.0	2.1	2.3	2.4

Note: The quarterly annual growth rates are based on the current quarter relative to the same quarter one year earlier. Final domestic demand is C+I+G in obvious notation. The data for 2003(i) is preliminary. These data are from the Bank of England databank.



By and large, variations in this equilibrium rate of unemployment, through time and across countries, will lie behind the broad patterns of unemployment we observe in Table 1. So explaining the equilibrium rate is the key problem. Of course, aggregate demand determines unemployment, so variations in aggregate demand (relative to trend) will “explain” precisely the observed patterns of unemployment. But this is more of a tautology than an explanation. A country will suffer from persistently high unemployment, that is persistently “low” aggregate demand, if its equilibrium level of unemployment is high. Because then, any attempt to raise aggregate demand and hence lower unemployment will run into the inflation constraint.

An interesting example is the Eurozone in the late 1990s. The Eurozone is, of course, dominated in size by the big four Continental European economies, France, Germany, Italy and Spain. A picture of events for 1994 to 2002 is set out in Table 2. As a general rule of thumb, monetary policy, as captured by short-term interest rates, impacts on demand with a lag of about a year and on inflation in a further year. Early in the period, monetary policy was quite tight, domestic demand growth was relatively modest, unemployment was nearly 11 percent and the inflation rate was falling. Monetary policy was eased during the late 1990s, domestic demand growth expanded and unemployment started falling. However, by early 2000, inflation had started to move above the ECB target range<sup>3</sup> even though unemployment was still above 8 percent. As a consequence, monetary policy was tightened throughout 2000. Despite subsequent easing, particularly in late 2001, domestic demand fell rapidly from the second half of 2000 and unemployment started to rise from a low point of 7.9 percent in mid-2001.<sup>4</sup> Despite this, inflation remains above the ECB target range. The lesson from this episode appears to be that in the Eurozone, the reduction in unemployment generated by monetary policy easing in the late 1990s hit the inflation constraint in 2000 and monetary policy had to be tightened to stop inflation rising further. This prevented Eurozone unemployment

falling much below 8 percent. On the basis of this example, it is hard to see how average equilibrium unemployment in the Eurozone can be below 8 percent, a relatively high level, particularly as unemployment in most of the small Eurozone countries has been well below this level for many years.

#### *Can Unemployment Deviate from its Equilibrium Level for Long Periods?*

This is a typical example of how actual unemployment fluctuates around its equilibrium level. But it is not always like this. On some occasions, countries may suffer from high levels of unemployment for long periods of time either because they experience an overwhelming adverse demand shock from which it takes a very long time to recover or because macroeconomic policy is persistently perverse. In the former case, we may observe unemployment well above its equilibrium rate, although falling back towards it. In this case inflation may not fall, although unemployment is above its equilibrium rate, because the very fact that unemployment is falling will itself typically generate upward inflationary pressure. This offsets the downward inflationary pressure produced by the high *level* of unemployment.<sup>5</sup> In the latter case, unemployment which is kept above its equilibrium rate will tend simply to generate falling inflation. Good examples of these two cases are provided by Finland and Japan. In Finland, a combination of poor policy decisions including a mishandled deregulation of the financial sector produced a huge adverse demand shock in the early 1990s which was reinforced by the collapse of trade with the Soviet Union. Consequently, as we can see in Table 3, unemployment rose from 3.2 percent to 16.4 percent in three years. From 1994 onwards, unemployment has fallen steadily without any serious inflationary consequences. This is a good example of unemployment being above the equilibrium rate for a decade but steadily falling back, simply as the consequence of an enormous adverse demand shock.

The example of Japan is different. From 1990 on, unemployment has been rising throughout and, with a brief hiccup, inflation has been falling, turning negative in 1999. This suggests that unemployment has been above the equilibrium rate for a long time which equally suggests that something has gone wrong on the macro policy front.

<sup>3</sup> 2 percent is at the top of the ECB target range.

<sup>4</sup> Of course, the US economy turned down in 2001 and this would have had some additional impact on the Eurozone. However, looking closely at the data, we see that in 2000/2, GDP growth has exceeded the growth of final domestic demand in every quarter, indicating a positive contribution of net trade (plus inventories) throughout. Furthermore, from the peak of GDP growth [2000 (ii)] to the trough [2002 (i)], GDP growth fell by 3.8 percentage points and the final domestic demand contribution fell by 3.3 percentage points. So the vast majority of the fall arises domestically.

<sup>5</sup> This is a standard consequence of hysteresis in the unemployment process. There is a discussion on p.382 of Layard et al. (1991).

Table 3

## Examples of Unemployment and Inflation Patterns

	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02
Finland <i>u</i>	5.0	4.5	3.2	3.2	6.6	11.6	16.4	16.7	15.2	14.5	12.6	11.4	10.2	9.7	9.1	9.1
<i>p</i>	3.6	4.7	6.5	6.1	4.1	2.6	2.2	1.0	1.0	0.6	1.2	1.4	1.2	3.4	2.5	1.8
Japan <i>u</i>	2.8	2.5	2.3	2.1	2.1	2.2	2.5	2.9	3.1	3.4	3.4	4.1	4.7	4.7	5.0	5.4
<i>p</i>	0.1	0.7	2.3	3.1	3.2	1.8	1.2	0.7	-0.1	0.1	1.8	0.6	-0.3	-0.7	-0.7	-0.9

*u* is the ILO unemployment rate. – *p* is the CPI inflation rate.

Aside from these types of exceptions, the longer-term patterns of unemployment tend to be dominated by shifts in the equilibrium rate. So what determines this rate? There are innumerable detailed theories of unemployment in the long run. These may be divided into two broad groups, those based on flow models and those based on stock models. Pissarides (1990) and Mortensen and Pissarides (1999) provide good surveys of the former model type. Blanchard and Katz (1999) presents a general template for the latter models. Fundamentally, all the models have the same broad implications. The equilibrium level of unemployment is affected first, by any variable which influences the ease with which unemployed individuals can be matched to available job vacancies, and second, by any variable which tends to raise wages in a direct fashion despite excess supply in the labour market. There may be variables common to both sets. Most of these variables reflect labour market institutions such as unemployment benefits or unions. So in the next section we consider some of the evidence in favour of this overall framework.

### Labour Market Institutions and Unemployment Patterns

The purpose of this section is to consider whether it has proved possible to explain the unemployment patterns shown in Table 1 by variations over time and across countries in labour market institutions. Cross-country variation in post-1980s unemployment is easy enough to explain by cross-country variation in labour market institutions (see, for example, Layard et al. 1991, p. 55; Scarpetta 1996; Nickell 1997, Elmeskov et al. 1998; Nickell and Layard 1999). More interesting and more tricky is to explain the time series variation from the 1960s onward.

There are several different approaches that have been used. First there is a basic division between

studies that use econometric techniques to fit the data and those which use calibrated models which typically distinguish between a stylised “European” economy and a stylised “United States” economy. Second there is another division between those which focus on changes in the institutions and those which consider “shocks” or baseline factors which shift over time and are typically interacted with average levels of institutional factors.

Looking first at panel data econometric models which interact stable institutions with shocks or baseline variables, good examples include Layard et al. (1991), Chapter 9 (pp. 430–37), Blanchard and Wolfers (2000), Bertola et al. (2002) and Fitoussi et al. (2000). All these focus on the time series variation in the data by including country dummies. Layard et al. (1991) present a dynamic model of unemployment based on annual data where the baseline variables include wage pressure (a dummy which takes the value one from 1970), the benefit replacement ratio, real import price changes and monetary shocks. Their impact on unemployment differs across countries, since it depends on time invariant institutions, with different sets of institutions affecting the degree of unemployment persistence, the impact of wage pressure variables including the replacement rate and import prices, and the effect of monetary shocks. The model explains the data better than individual country autoregressions with trends.

Blanchard and Wolfers (2000) use five year averages to concentrate on long-run effects. The shocks or baseline variables consist of the level of TFP growth, the real interest rate, the change in inflation and labour demand shifts (essentially the log of labour’s share purged of the impact of factor prices). With the exception of the change in inflation, these “shocks” are not mean reverting which is why we prefer the term baseline variables. These variables are driving unemployment, so that, for

example, the fact that annual TFP growth is considerably higher in the 1960s than in the 1990s in most countries is an important reason why unemployment is typically higher in the latter period. Quite why this should be so is not wholly clear. Many mechanisms are discussed in Saint-Paul (1991) but there is no evidence that they are important or robust in Bean and Pissarides (1993) for example. Nevertheless, interacting these observed baseline variables with time invariant institutional variables fits the data well. In an alternative investigation, Blanchard and Wolfers replace the observed shock variables with unobserved common shocks represented by time dummies. As a consequence, the explanatory power of the model increases substantially.

The basic Blanchard and Wolfers model is extended in Bertola et al. (2002) who include an additional baseline variable, namely the share of young people (age 15 to 24) in the population over 15 years old. The model explains a substantial proportion of the divergence between US and other countries unemployment rates (48 to 63 percent) over the period 1970 to 1995, although an even higher proportion is explained when the observed baseline variables are replaced by time dummies.

Fitoussi et al. (2000) proceed in a slightly different way. First they interact the baseline variables with country dummies and then investigate the cross-section relationship between these and labour market institutions. The baseline variables include non-wage support (income from private wealth plus social spending) relative to labour productivity and the real price of oil as well as two in common with Blanchard and Wolfers (2000), namely the real rate of interest and productivity growth. In all these four papers, the explanation of long-run changes in unemployment has the same structure. The changes depend on long-run shifts in a set of baseline variables, with the impact of these being much bigger and longer-lasting in some countries than others because of stable institutional differences. The persuasiveness of these explanations depends on whether the stories associated with the baseline variables are convincing. For example, the notion that a fall in trend productivity growth, a rise in the real price of oil or a downward shift in the labour demand curve leads to a *permanent* rise in equilibrium unemployment in one which many might find unappealing.

An interesting alternative, still in the context of the institutions/shocks framework is the calibration analysis discussed in Ljungqvist and Sargent (1998). The idea here is that in “Europe”, benefits are high with a long duration of eligibility whereas in the “United States”, benefits are modest and of fixed duration. In a world where turbulence is low, the probability of large skill losses among the unemployed is low and the difference in the unemployment rates in “Europe” and the “United States” is minimal, because the chances of an unemployed person in “Europe” finding a job with wages exceeding the benefit level are high. In a world where turbulence is high, the probability of large skill losses among the unemployed is high. As a consequence the high level of benefits relative to past earnings and hence the high reservation wage in “Europe” now bites and unemployment is much higher than in the “United States”. So we have a situation where the relevant institution, namely the benefit system, remains stable but the consequences are very different in a world of high turbulence from those in a world of low turbulence.

While this model captures a particular feature of the situation, in order for it to be a persuasive explanation of recent history it must pass two tests. First, we need evidence that turbulence has indeed increased and second it must explain why many countries in Europe now have relatively low unemployment. Indeed the variation in unemployment (and employment) rates across European countries is far larger than the difference between Europe and the United States. To justify the assumption of increasing turbulence, Ljungqvist and Sargent point to the increasing variance of transitory earnings in the United States reported by Gottschalk and Moffitt (1994). There has also been a rise in the transitory variance in the UK, noted by Dickens (2000). However these facts hardly add up to a full empirical test of the theory. For example, in Europe, TFP growth has been much lower since 1976 than it was in the earlier period and we might expect TFP growth to be positively associated with turbulence. Indeed, the *fall* in TFP growth is one of the main factors generating a rise in unemployment in Blanchard and Wolfers (2000). Furthermore, there is no evidence of any significant changes in the rates of job creation and job destruction over the relevant period (see Davis and Haltiwanger 1999). Finally, no evidence is presented which explains why the various European countries have such widely differing

unemployment patterns. So while the Lungqvist/Sargent model may capture an element of the story, it hardly comes close to a full explanation.

Turning now to studies which simply rely on changing institutions to explain unemployment patterns, notable examples include Belot and Van Ours (2000, 2001) and Nickell et al. (2002). The former papers provide a good explanation of changes in unemployment in eighteen OECD countries, although in order to do so they make extensive use of interactions between institutions, something which has a sound theoretical foundation (see Coe and Snower 1997, for example). Their model is, however, static like that of Blanchard and Wolfers. The model developed by Nickell et al. (2002) uses annual data and since they explain actual unemployment, they include in their model those factors which might explain the short-run deviations of unemployment from its equilibrium level. Following the discussion in Hoon and Phelps (1992) or Phelps (1994) these factors include aggregate demand shocks, productivity shocks and wage shocks. More specifically, they include the following:

- i money supply shocks, specifically changes in the rate of growth of the nominal money stock (i.e. the second difference of the log money supply);
- ii productivity shocks, measured by *changes* in TFP growth or deviations of TFP growth from trend;
- iii labour demand shocks, measured by the residuals from a simple labour demand model;
- iv real import price shocks, measured by proportional changes in real import prices weighted by the trade share;
- v the (ex-post) real interest rate.

With the exception of the real interest rate, these variables are genuine “shocks” in the sense that they are typically stationary and tend to revert to their mean quite rapidly. This distinguishes them from the “baseline variables” used in Blanchard and Wolfers (2000), for example. On top of these variables, Nickell et al. (2002) then use such time series of the institutional variables as are available including employment protection, the benefit replacement rate, benefit duration, union density, co-ordination and employment taxes. These variables are there to explain equilibrium unemployment. Using a dynamic panel data model, the time series patterns of unemployment are well explained. Based on dynamic simulations keeping

institutions fixed at their 1960s values, it is found that the institutional variables which are included explain about 55 percent of the individual country changes in unemployment from the 1960s to the early 1990s. This is reasonable, particularly as the early 1990s was a period of deep recession in much of Europe.

Overall, therefore, there is some evidence that the sort of labour market institutions discussed in the previous section made a significant contribution to explaining the patterns of unemployment reported in Table 1. So, as a final step, let us see how these institutional variables have changed over time and what these changes can tell us about why the European Big Four countries have performed less well than most other countries on the unemployment front in the 1990s.

### **Changes in Labour Market Institutions and their Impact**

In this section we look at changes in benefit systems, wage determination, employment protection and labour taxes in the last decades of the 20th Century and see what they can tell us.

#### *The Unemployment Benefit System*

There are four aspects of the unemployment benefit system for which there are good theoretical and empirical reasons to believe that they will influence equilibrium unemployment. These are, in turn, the level of benefits<sup>6</sup>, the duration of entitlement<sup>7</sup>, the coverage of the system<sup>8</sup> and the strictness with which the system is operated.<sup>9</sup> Of these, only the first two are available as time series for the OECD countries. The OECD has collected sys-

<sup>6</sup> A good general reference is Holmlund (1998). A useful survey of micro studies can be found in OECD (1994), Chapter 8. Micro evidence from policy changes is contained in Carling et al. (1999), Hunt (1995) and Harkman (1997). Cross-country macro evidence is available in Nickell and Layard (1999), Scarpetta (1996) and Elmeskov et al. (1998). The average of their results indicates a 1.11 percentage point rise in equilibrium unemployment for every 10 percentage point rise in the benefit replacement ratio.

<sup>7</sup> There is fairly clear micro evidence that shorter benefit entitlement leads to shorter unemployment duration (see Ham and Rea (1987), Katz and Meyer (1990) and Carling et al. (1996)).

<sup>8</sup> Variations in the coverage of unemployment benefits are large (see OECD 1994, Table 8.4) and there is a strong positive correlation between coverage and the level of benefit (OECD 1994, p.190). Bover et al. (1998) present strong evidence for Spain and Portugal that covered workers exit unemployment more slowly than uncovered workers.

<sup>9</sup> There is strong evidence that the strictness with which the benefit system is operated, at given levels of benefit, is a very important determinant of unemployment duration. Micro evidence for the Netherlands may be found in Abbring et al. (1999) and van Den Berg et al. (1999). Cross country evidence is available in the Danish Ministry of Finance (1999), Chapter 2 and in OECD (2000), Chapter 4.

**Table 4**  
**Unemployment Benefit Replacement Ratios, 1960-95**

	1960-64	1965-72	1973-79	1980-87	1988-95	1999
Australia	0.18	0.15	0.23	0.23	0.26	0.25
Austria	0.15	0.17	0.30	0.34	0.34	0.42
Belgium	0.37	0.40	0.55	0.50	0.48	0.46
Canada	0.39	0.43	0.59	0.57	0.58	0.49
Denmark	0.25	0.35	0.55	0.67	0.64	0.66
Finland	0.13	0.18	0.29	0.38	0.53	0.54
France	0.48	0.51	0.56	0.61	0.58	0.59
Germany (W)	0.43	0.41	0.39	0.38	0.37	0.37
Ireland	0.21	0.24	0.44	0.50	0.40	0.35
Italy	0.09	0.06	0.04	0.02	0.26	0.60*
Japan	0.36	0.38	0.31	0.29	0.30	0.37
Netherlands	0.39	0.64	0.65	0.67	0.70	0.70
Norway	0.12	0.13	0.28	0.56	0.62	0.62
New Zealand	0.37	0.30	0.27	0.30	0.29	0.30
Portugal	-	-	0.17	0.44	0.65	0.65
Spain	0.35	0.48	0.62	0.75	0.68	0.63
Sweden	0.11	0.16	0.57	0.70	0.72	0.74
Switzerland	0.04	0.02	0.21	0.48	0.61	0.74
UK	0.27	0.36	0.34	0.26	0.22	0.17
US	0.22	0.23	0.28	0.30	0.26	0.29

\* This number refers to the »mobility« benefit, paid to those who become unemployed as a result of a collective layoff. Most Italian unemployed do not fall under this category.

Source: OECD. Based on the replacement ratio in the first year of an unemployment spell averaged over three family types. See OECD (1994), Table 8.1 for an example.

tematic data on the unemployment benefit replacement ratio for three different family types (single, with dependent spouse, with spouse at work) in three different duration categories (1<sup>st</sup> year, 2<sup>nd</sup> and 3<sup>rd</sup> years, 4<sup>th</sup> and 5<sup>th</sup> years) from 1961 to 1999 (every other year). (See OECD 1994, Table 8.1 for the 1991 data.) From this we derive a measure of the benefit replacement ratio, equal to the average over family

types in the 1<sup>st</sup> year duration category and a measure of benefit duration equal to  $[0.6 \text{ (2<sup>nd</sup> and 3<sup>rd</sup> year replacement ratio)} + 0.4 \text{ (4<sup>th</sup> and 5<sup>th</sup> year replacement ratio)}] \div \text{(1<sup>st</sup> year replacement ratio)}$ . So our measure of benefit duration is the level of benefit in the later years of the spell normalised on the benefit in the first year of the spell. A summary of these data is presented in Tables 4 and 5.

The key feature of these data is that in nearly all countries, benefit replacement ratios have tended to become more generous from the 1960s to the late 1970s, the exceptions being Germany, Japan and New Zealand. Italy had no effective benefit system over this period for the vast majority of the unemployed.

After the late 1970s, countries moved in different directions. Italy introduced a benefit system and those in Finland, Portugal and Switzerland became markedly more generous. By contrast, benefit replacement ratios in Belgium, Ireland the UK have fallen steadily since the late 1970s or early 1980s.

It is unfortunate that we have no comprehensive time series data on the coverage of the system or on the strictness with which it is administered. This is particularly true in the case of the latter because the evidence we possess appears to indicate that this is of crucial importance in determining the extent to which a generous level of benefit will actually influence unemployment. For example, Denmark, which has very generous unemployment benefits (see Tables 4, 5), totally reformed the operation of its benefit system through the 1990s with a view to tightening the criteria for benefit receipt and the enforcement of these criteria via a comprehensive system of sanctions. The Danish Ministry of Labour is convinced that this process has played a major role

**Table 5**  
**Unemployment Benefit Duration Index, 1960-95**

	1960-64	1965-72	1973-79	1980-87	1988-95	1999
Australia	1.02	1.02	1.02	1.02	1.02	1.00
Austria	0	0	0.69	0.75	0.74	0.68
Belgium	1.0	0.96	0.78	0.79	0.77	0.78
Canada	0.33	0.31	0.20	0.25	0.22	0.42
Denmark	0.63	0.66	0.66	0.62	0.84	1.00
Finland	0	0.14	0.72	0.61	0.53	0.63
France	0.28	0.23	0.19	0.37	0.49	0.47
Germany	0.57	0.57	0.61	0.61	0.61	0.75
Ireland	0.68	0.78	0.39	0.40	0.39	0.77
Italy	0	0	0	0	0.13	0
Japan	0	0	0	0	0	0
Netherlands	0.12	0.35	0.53	0.66	0.57	0.64
Norway	0	0.07	0.45	0.49	0.50	0.60
New Zealand	1.02	1.02	1.02	1.04	1.04	1.00
Portugal	-	-	0	0.11	0.35	0.58
Spain	0	0	0.01	0.21	0.27	0.29
Sweden	0	0	0.04	0.05	0.04	0.02
Switzerland	0	0	0	0	0.18	0.31
UK	0.87	0.59	0.54	0.71	0.70	0.96
US	0.12	0.17	0.19	0.17	0.18	0.22

Source: OECD. Based on  $[0.06 \text{ (replacement ratio in 2<sup>nd</sup> and 3<sup>rd</sup> years of a spell)} + 0.04 \text{ (replacement ratio in 4<sup>th</sup> and 5<sup>th</sup> year of a spell)}] \div \text{(replacement ratio in 1<sup>st</sup> year of a spell)}$ .

**Table 6**  
**Index of the Strictness of Work Availability Conditions,**  
**Mid-1990s**

Australia	3.6	Japan	-
Austria	2.3	Netherlands	3.7
Belgium	3.1	Norway	3.3
Canada	2.8	New Zealand	2.7
Denmark <sup>a</sup>	3.0	Portugal	2.8
Finland	2.7	Spain	-
France	2.7	Sweden	3.7
Germany	2.6	Switzerland	-
Ireland	1.7	UK	2.6
Italy	-	US	3.3

<sup>a</sup> This refers to 1998. In the early 1990s, the corresponding number was 2.3.

Source: Danish Ministry of Finance (1999), *The Danish Economy Medium Term Economic Survey*, Figure 2.4 d.

in allowing Danish unemployment to fall dramatically since the early 1990s without generating inflationary pressure (see Danish Ministry of Finance 1999, Chapter 2). Just to see some of the ways in which systems of administration vary across countries, in Table 6 we present indices of the strictness of the work availability conditions in various countries. These are based on eight sub-indicators referring to the rules relating to the types of jobs that unemployed individuals must accept or incur some financial or other penalty. We can see that countries with notable lax systems in the mid-1990s include Austria, Finland, France, Germany, Ireland and the UK, although Ireland and the UK have significantly tightened their benefit operations since that time.

A further aspect of the structure of the benefit system for which we do not have detailed data back to the 1960s are those policies grouped under the heading of active labour market policies (ALMP). We do, however, have data from 1985 which we present in Table 7. The purpose of these is to provide active assistance to the unemployed which will improve their chances of obtaining work. Multi-country studies basically using cross section information indicate that ALMPs do have a negative impact on unemployment (e.g. Scarpetta 1996; Nickell 1997; Elmeskov et al. 1998). This broad brush evidence is backed up by numbers of microeconomic studies (see Katz 1998, Martin 2000 or Martin and Grubb 2001 for useful surveys) which show that under some circumstances, active labour market policies are effective. In particular, job search assistance tends to have consistently positive outcomes but other types of measure such as employment subsidies and labour market training must be well designed if they are to have a significant impact (see Martin 2000, for a detailed analysis).

Turning to the numbers, we see that, by and large, the countries of Northern Europe and Scandinavia devote most resources to ALMPs. It might be hypothesised that they do this because high expenditure on ALMPs is required to offset their rather generous unemployment benefit systems and to push unemployed individuals into work. Such additional pressure on the unemployed is not required if benefits are very low relative to potential earnings in work.

**Table 7**  
**Expenditure on Active Labour Market Policies (%GDP)**

	1985		1989		1993		1998	
Australia	0.42	(0.051)	0.24	(0.039)	0.71	(0.065)	0.42	(0.053)
Austria	0.27	(0.075)	0.27	(0.084)	0.32	(0.080)	0.44	(0.098)
Belgium	1.31	(0.12)	1.26	(0.16)	1.24	(0.14)	1.42	(0.15)
Canada	0.64	(0.062)	0.51	(0.068)	0.66	(0.058)	0.50	(0.052)
Denmark	1.14	(0.13)	1.13	(0.12)	1.74	(0.17)	1.66	(0.32)
Finland	0.90	(0.18)	0.97	(0.26)	1.69	(0.10)	1.40	(0.12)
France	0.66	(0.065)	0.73	(0.078)	1.25	(0.11)	1.30	(0.11)
Germany	0.80	(0.11)	1.03	(0.18)	1.53	(0.19)	1.26	(0.14)
Ireland	1.52	(0.087)	1.41	(0.096)	1.54	(0.099)	1.54	(0.21)
Italy	-	-	-	-	1.36	(0.13)	1.12	(0.095)
Japan	0.17	(0.065)	0.16	(0.070)	0.09	(0.036)	0.09	(0.022)
Netherlands	1.16	(0.11)	1.25	(0.15)	1.59	(0.24)	1.74	(0.42)
Norway	0.61	(0.23)	0.81	(0.17)	1.15	(0.19)	0.90	(0.27)
New Zealand	0.90	(0.25)	0.93	(0.13)	0.79	(0.083)	0.63	(0.084)
Portugal	0.33		0.48		0.84	(0.15)	0.78	(0.15)
Spain	0.33	(0.015)	0.85	(0.050)	0.50	(0.022)	0.70	(0.037)
Sweden	2.10	(0.88)	1.54	(1.10)	2.97	(0.34)	1.97	(0.24)
Switzerland	0.19	(0.079)	0.21	(0.12)	0.38	(0.095)	0.77	(0.22)
UK	0.75	(0.067)	0.67	(0.093)	0.57	(0.054)	0.34	(0.054)
US	0.25	(0.035)	0.23	(0.044)	0.21	(0.030)	0.17	(0.038)

(In brackets, we present the figure normalised on the percent unemployment rate)

Source: OECD Employment Outlook, 2001, Table 1.5.

**Table 8****Collective bargaining coverage (%)**

	1960	1965	1970	1975	1980	1985	1990	1994
Austria	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	99	99
Australia	85	85	85	85	85	85	80	80
Belgium	80	80	80	85	90	90	90	90
Canada	35	33	36	39	40	39	38	36
Denmark	67	68	68	70	72	74	69	69
Finland	95	95	95	95	95	95	95	95
France	n.a.	n.a.	n.a.	n.a.	85	n.a.	92	95
Germany (W)	90	90	90	90	91	90	90	92
Ireland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Italy	91	90	88	85	85	85	83	82
Japan	n.a.	n.a.	n.a.	n.a.	28	n.a.	23	21
Netherlands	100	n.a.	n.a.	n.a.	76	80	n.a.	85
New Zealand	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	67	31
Norway	65	65	65	65	70	70	70	70
Portugal	n.a.	n.a.	n.a.	n.a.	70	n.a.	79	71
Spain	n.a.	n.a.	n.a.	n.a.	68	70	76	78
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	86	89
Switzerland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	53	53
UK	67	67	68	72	70	64	54	40
US	29	27	27	24	21	21	18	17

These data were collected by Wolfgang Ochel. Further details may be found in Ochel (2001).

**Systems of Wage Determination**

In most countries in the OECD, the majority of workers have their wages set by collective bargaining between employers and trade unions at the plant, firm, industry or aggregate level. This is important for our purposes because there is some evidence that trade union power in wage setting has a significant impact on unemployment.<sup>10</sup> Unfortunately, we do not have complete data on collective bargaining coverage (the proportion of employees covered by collective agreements) but the data presented in Table 8 give a reasonable picture. Across most of Continental Europe, including Scandinavia but excluding Switzerland, coverage is both high and stable. As we shall see, this is either because most people belong to trade unions or because

<sup>10</sup> See the discussion in Nickell and Layard (1999), Section 8 and Booth et al. (2000) (particularly around Table 6.2) for positive evidence.

union agreements are extended by law to cover non-members in the same sector. In Switzerland and in the OECD countries outside Continental Europe and Scandinavia, coverage is generally much lower with the exception of Australia. In the UK, the US and New Zealand, coverage has declined with the fall in union density, there being no extension laws.

In Table 9, we present the percentage of employees who are union members. Across most of Scandinavia, membership tends to be high. By contrast, in much of Continental Europe and in Australia, union density tends to be less than 50 percent and is gradually declining. In these

countries there is, consequently, a wide and widening gap between density and coverage which it is the job of the extension laws to fill. This situation is at its most stark in France, which has the lowest

**Table 9****Union Density (%)**

	1960–64	1965–72	1973–79	1980–87	1988–95	1996–98	Extension laws in place (a)
Australia	48	45	49	49	43	35	✓
Austria	59	57	52	51	45	39	✓
Belgium	40	42	52	52	52	-	✓
Canada	27	29	35	37	36	36	X
Denmark	60	61	71	79	76	76	X
Finland	35	47	66	69	76	80	✓
France	20	21	21	16	10	10	✓
Germany (W)	34	32	35	34	31	27	✓
Ireland	47	51	56	56	51	43	X
Italy	25	32	48	45	40	37	✓
Japan	33	33	30	27	24	22	X
Netherlands	41	38	37	30	24	24	✓
Norway	52	51	52	55	56	55	X
New Zealand	36	35	38	37	35	21	X
Portugal	61	61	61	57	34	25	✓
Spain	9	9	9	11	16	18	✓
Sweden	64	66	76	83	84	87	X
Switzerland	35	32	32	29	25	23	✓ (b)
UK	44	47	55	53	42	35	X
US	27	26	25	20	16	14	X

**Notes:**

(i) Union density = union members as a percentage of employees. In both Spain and Portugal, union membership in the 1960s and 1970s does not have the same implications as elsewhere because there was pervasive government intervention in wage determination during most of this period.

(ii) (a) Effectively, bargained wages extended to non-union firms typically at the behest of one party to the bargain.

(b) Extension only at the behest of both parties to a bargain. For details, see OECD (1994), Table 5.11.

Source: Ebbinghaus and Visser (2000).

Table 10

## Co-ordination Indices (Range 1-3)

	1960-64		1965-72		1973-79		1980-87		1988-95		1995-99
	1	2	1	2	1	2	1	2	1	2	2
Australia	2.25	2	2.25	2	2.25	2.36	2.25	2.31	1.92	1.63	1.5
Austria	3	2.5	3	2.5	3	2.5	3	2.5	3	2.42	2
Belgium	2	2	2	2	2	2.1	2	2.55	2	2	2
Canada	1	1	1	1	1	1.63	1	1.08	1	1	1
Denmark	2.5	3	2.5	3	2.5	2.96	2.4	2.54	2.26	2.42	2
Finland	2.25	1.5	2.25	1.69	2.25	2	2.25	2	2.25	2.38	2.5
France	1.75	2	1.75	2	1.75	2	1.84	2	1.98	1.92	1.5
Germany (W)	3	2.5	3	2.5	3	2.5	3	2.5	3	2.5	2.5
Ireland	2	2	2	2.38	2	2.91	2	2.08	3	2.75	3
Italy	1.5	1.94	1.5	1.73	1.5	2	1.5	1.81	1.4	1.95	2.5
Japan	3	2.5	3	2.5	3	2.5	3	2.5	3	2.5	2.5
Netherlands	2	3	2	2.56	2	2	2	2.38	2	3	3
Norway	2.5	3	2.5	3	2.5	2.96	2.5	2.72	2.5	2.84	2
New Zealand	1.5	2.5	1.5	2.5	1.5	2.5	1.32	2.32	1	1.25	1
Portugal	1.75	3	1.75	3	1.75	2.56	1.84	1.58	2	1.88	2
Spain	2	3	2	3	2	2.64	2	2.3	2	2	2
Sweden	2.5	3	2.5	3	2.5	3	2.41	2.53	2.15	1.94	2
Switzerland	2.25	2	2.25	2	2.25	2	2.25	2	2.25	1.63	1.5
UK	1.5	1.56	1.5	1.77	1.5	1.77	1.41	1.08	1.15	1	1
US	1	1	1	1	1	1	1	1	1	1	1

Note: The first series (1) only moves in response to major changes, the second series (2) attempts to capture all the nuances. Co-ordination 1 was provided by Michèle Belot to whom much thanks (see Belot and van Ours 2000, for details). Co-ordination 2 is the work of Wolfgang Ochel, to whom we are most grateful (see Ochel 2000). Co-ordination 1 appears in all the subsequent regressions.

union density in the OECD at around 10 percent, but one of the highest levels of coverage (around 95 percent). Outside these regions, both density and coverage tend to be relatively low and both are declining at greater or lesser rates.

The other aspect of wage bargaining which appears to have a significant impact on wages and unemployment is the extent to which bargaining is co-ordinated.<sup>11,12</sup> Roughly speaking, the evidence suggests that if bargaining is highly co-ordinated, this will completely offset the adverse effects of unionism on employment (see Nickell and Layard 1999, for example). Co-ordination refers to mechanisms whereby the aggregate employment implications of wage determination are taken into account when wage bargains are struck. This may be achieved if wage bargaining is highly centralised, as in Austria, or if there are institutions, such as employers' federations, which can assist bargainers to act in concert even when bargaining

itself ostensibly occurs at the level of the firm or industry, as in Germany or Japan (see Soskice 1991). It is worth noting that co-ordination is not, therefore, the same as centralisation which refers simply to the level at which bargaining takes place (plant, firm, industry or economy-wide). In Table 10, we present co-ordination indices for the OECD from the 1960s. The first index (co-ord 1) basically ignores transient changes whereas the second (co-ord 2) tries to capture the various detailed nuances of the variations in the institutional structure. Notable changes are the increases in co-ordination in Ireland and the Netherlands towards the end of the period and the declines in co-ordination in Australia, New Zealand and Sweden. Co-ordination also declines in the UK over the same period but this simply reflects the sharp decline of unionism overall.

#### Employment Protection

Employment protection laws are thought by many to be a key factor in generating labour market inflexibility. Despite this, evidence that they have a decisive impact on overall rates of unemployment

<sup>11</sup> See the discussion in Nickell and Layard (1999), Section 8, Booth et al. (2000) (particularly around Table 6.1) and OECD (1997), Chapter 3.

<sup>12</sup> One aspect of wage determination which we do not analyse in this paper is minimum wages. This is for two reasons. First, the balance of the evidence suggests that minimum wages are generally low enough not to have much of an impact on employment except for young people. Second, only around half the OECD countries had statutory minimum wages over the period 1960 to 95. Of course, trade unions may enforce "minimum wages" but this is only a minor part of their activities. And these are already accounted for in our analysis of density, coverage and co-ordination.

<sup>13</sup> The results presented by Lazear (1990), Addison and Grosso (1996), Bentolila and Bertola (1990), Elmeskov et al. (1998), Nickell and Layard (1999) do not add up to anything very decisive although there is a clear positive relationship between employment protection and long-term unemployment.



Table 11

## Employment Protection (Index, 0-2)

	1960-64	1965-72	1973-79	1980-87	1988-95	1998
Australia	0.50	0.50	0.50	0.50	0.50	0.50
Austria	0.65	0.65	0.84	1.27	1.30	1.10
Belgium	0.72	1.24	1.55	1.55	1.35	1.00
Canada	0.30	0.30	0.30	0.30	0.30	0.30
Denmark	0.90	0.98	1.10	1.10	0.90	0.70
Finland	1.20	1.20	1.20	1.20	1.13	1.00
France	0.37	0.68	1.21	1.30	1.41	1.40
Germany (W)	0.45	1.05	1.65	1.65	1.52	1.30
Ireland	0.02	0.19	0.45	0.50	0.52	0.50
Italy	1.92	1.99	2.00	2.00	1.89	1.50
Japan	1.40	1.40	1.40	1.40	1.40	1.40
Netherlands	1.35	1.35	1.35	1.35	1.28	1.10
Norway	1.55	1.55	1.55	1.55	1.46	1.30
New Zealand	0.80	0.80	0.80	0.80	0.80	0.80
Portugal	0.00	0.43	1.59	1.94	1.93	1.70
Spain	2.00	2.00	1.99	1.91	1.74	1.40
Sweden	0.00	0.23	1.46	1.80	1.53	1.10
Switzerland	0.55	0.55	0.55	0.55	0.55	0.55
UK	0.16	0.21	0.33	0.35	0.35	0.35
US	0.10	0.10	0.10	0.10	0.10	0.10

Note: These data are based on an interpolation of the variable used by Blanchard and Wolfers (2000), to whom we are most grateful. This variable is based on the series used by Lazear (1990) and that provided by the OECD for the late 1980s and 1990s. Since the Lazear index and the OECD index are not strictly comparable, the overall series is not completely reliable. The 1998 number is taken from Nicoletti et al. (2000), Table A3.11 (1<sup>st</sup> col. rescaled).

is mixed, at best.<sup>13</sup> In Table 11, we present details of an employment protection index for the OECD countries. Features to note are the wide variation in the index across countries and the fact that, in some countries, the basic legislation was not introduced until the 1970s.

#### Labour Taxes

The important taxes here are those that form part of the wedge between the real product wage (labour costs per employee normalised on the output price) and the real consumption wage (after tax pay normalised on the consumer price index). These are payroll taxes, income taxes and consumption taxes. Their combined impact on unemployment remains a subject of some debate despite the large number of empirical investigations. Indeed some studies indicate

<sup>14</sup> A good example of a study in this latter group is Daveri and Tabellini (2000) whereas one in the former group is OECD (1990, Annex 6). Extensive discussions may be found in Nickell and Layard (1999), Section 6, Disney (2000) and Pissarides (1998).

that employment taxes have no long run impact on unemployment whatever whereas others present results which imply that they can explain more or less all the rise in unemployment in most countries during the 1960 to 1985 period.<sup>14</sup> In Table 12 we present the total tax rate on labour for the OECD countries. All countries exhibit a substantial increase over the period from the 1960s to the 1990s although there are wide variations across countries. These mainly reflect the extent to which health, higher education and pensions are publicly provided along with the all-round generosity of the social security system. Some countries have made significant attempts to reduce labour taxes in recent years, notably the Netherlands and the UK.

#### Labour Market Institutions and the Successes and Failures of the 1990s

Having looked at some of the key factors which the evidence suggests have some impact on equilibri-

Table 12

## Total Taxes on Labour

Payroll Tax Rate plus Income Tax Rate plus Consumption Tax Rate  
Total Tax Rate (%)

	1960-64	1965-72	1973-79	1980-87	1988-95	1996-2000
Australia	28	31	36	39	-	-
Austria	47	52	55	58	59	66
Belgium	38	43	44	46	49	51
Canada	31	39	41	42	50	53
Denmark	32	46	53	59	60	61
Finland	38	46	55	58	64	62
France	55	57	60	65	67	68
Germany (W)	43	44	48	50	52	50
Ireland	23	30	30	37	41	33
Italy	57	56	54	56	67	64
Japan	25	25	26	33	33	37
Netherlands	45	54	57	55	47	43
Norway	-	52	61	65	61	60
New Zealand	-	-	29	30	-	-
Portugal	20	25	26	33	41	39
Spain	19	23	29	40	46	45
Sweden	41	54	68	77	78	77
Switzerland	30	31	35	36	36	36
UK	34	43	45	51	47	44
US	34	37	42	44	45	45

Note: These data are based on the London School of Economics, Centre for Economic Performance OECD dataset.

Table 13

**From the Early 1980s to the Late 1990s**  
"Policy" Changes

	Replacement Rate	Benefit Duration	Benefit Strictness	ALMP	Union Coverage	Union Density	Co-ordination
<b>Europe</b>							
Austria	X	-	-	-	-	√	X
Belgium	√	-	-	-	-	-	X
Denmark	-	X	√	√√	-	-	X
Finland	X	-	-	-	-	X	√
France	-	X	-	√	X	-	X
Germany	-	X	-	√	-	-	-
Ireland	√	X	-	-	?	√	√
Italy	X	-	-	-	-	-	√
Netherlands	-	-	√	√	-	-	√
Norway	X	X	√	√	-	-	X
Portugal	X	X	-	√	-	√√	-
Spain	√	-	-	-	X	-	-
Sweden	X	-	-	-	-	-	X
Switzerland	XX	X	-	√	-	-	X
UK	√	X	√	X	√√	√	-
<b>Non-Europe</b>							
Australia	-	-	√	√	-	√	X
Canada	√	X	-	-	-	-	-
Japan	X	-	-	-	-	-	-
New Zealand	-	-	-	X	√√	√	XX
US	-	-	√	-	-	-	-
	Employment Protection	Labor Taxes	Total		Unemployment		Unemployment Change
			√	X	1980-87	2000-01	
<b>Europe</b>							
Austria	-	X	1	3	3.1	3.7	0.6
Belgium	√	-	2	1	11.2	6.8	-4.4
Denmark	√	-	4	2	7.0	4.4	-2.6
Finland	√	-	2	2	5.1	9.4	4.3
France	X	-	1	4	8.9	9.0	0.1
Germany	√	-	2	1	6.1	6.4	0.3
Ireland	-	√	4	1	13.8	4.0	-9.8
Italy	√	X	2	2	6.7	8.4	1.7
Netherlands	√	√	5	0	10.0	2.6	-7.4
Norway	√	-	3	3	2.4	3.6	1.2
Portugal	√	-	4	2	7.8	4.1	-3.7
Spain	√	-	2	1	17.6	13.5	-4.1
Sweden	√	-	1	2	2.3	5.5	3.2
Switzerland	-	-	1	4	1.8	2.6	0.8
UK	-	√	6	2	10.5	5.2	-5.3
<b>Non-Europe</b>							
Australia	-	?	3	1	7.7	6.5	-1.2
Canada	-	X	1	2	9.7	7.0	-2.7
Japan	-	-	0	1	2.5	4.9	2.4
New Zealand	-	?	3	3	4.7	5.7	1.0
US	-	-	1	0	7.6	4.4	-3.2

## Notes:

- (i) √ implies "good" shift, X implies "bad" shift.
- (ii) See Table 4. Replacement rate change (1980-87 to 1999) greater than 0.04 implies X, less than -0.04 implies √. Double X or √ for changes in excess of 0.25. The latter does not apply to Italy because the figure in the 1999 column refers to so few people.
- (iii) See Table 5. Duration index change (1980-87 to 1999) greater than 0.1 implies X, less than -0.1 implies √. Double X or √ for changes in excess of 0.5.
- (iv) See Table 6 and the discussion in OECD (2000), Chapter 4. Author's judgment based on this information.
- (v) See Table 7. Change (1985/9 to 1993/8) greater than 0.2 implies √, less than -0.2 implies X. Double √ or X for changes in excess of 0.5. Bracketed amount must move in the same direction by 0.05.
- (vi) See Table 8. Coverage change (1980 to 1994) greater than 0.1 implies X, less than -0.1 implies √. Double X or √ for changes in excess of 0.3.
- (vii) See Table 9. Density change (1980-87 to 1996-8) greater than 0.1 implies X, less than -0.1 implies √. Double X or √ for changes in excess of 0.3.
- (viii) See Table 10. Co-ordination (Type 2) change (1980-87 to 1995-99) greater than 0.5 implies √, less than -0.5 implies X. Double X or √ for changes in excess of 1.0.
- (ix) See Table 11. Employment protection change (1980-87 to 1998) greater than 0.2 implies √, less than -0.1 implies X.
- (x) See Table 12. Taxes and change (1980-87 or 1988-95 to 1996-2000) greater than 0.07 implies X, less than -0.07 implies √.

um unemployment, let us see how changes in these variables over the last two decades can contribute to our understanding of unemployment changes over the same period. In Table 13, we provide a picture of changes in the relevant variables with a tick referring to a significant move which will tend to reduce unemployment and a cross for the reverse. Double ticks and crosses reflect really big moves. A dash implies no significant change. Of course, this is a pretty crude business and a proper panel data analysis is arguably preferable. However, here we are able to take account of variables where we are unable to obtain long time series. Readers who prefer panel data analysis can consult the papers discussed in the second section.

So we can ask the question, do the ticks and crosses bear any relationship to the unemployment changes reported in the final columns of the table 1. If we regress the unemployment change from 1980/81 to 2000/01 on the number of ticks and crosses we obtain:

$$\text{Unemployment change (\%)} = 0.25 \text{ (3.1)} - 1.25 \text{ (2.2)} \text{ ticks} + 1.21 \text{ crosses} \quad \left( \begin{array}{l} R^2 = 0.51 \\ N = 20 \end{array} \right)$$

or, in restricted form,

$$\text{Unemployment change (\%)} = -0.42 \text{ (4.3)} - 1.24 \text{ (ticks-crosses)} \quad \left( \begin{array}{l} R^2 = 0.51 \\ N = 20 \end{array} \right)$$

The restriction is easily accepted. So the number of ticks and crosses explains about half the cross-country variation in unemployment changes from the early 80s to the present day. We may reasonably conclude that the countries which had very high unemployment in the early 1980s and still have high unemployment today simply have too few ticks and/or too many crosses.

## Summary and Conclusions

Average unemployment in Europe today is relatively high compared with OECD countries outside Europe. The majority of countries in Europe today have lower unemployment than any OECD country outside Europe, including the US. These two facts are consistent because the four largest countries in Continental Western Europe namely, France, Germany, Italy, Spain, (the Big Four), have very high unemployment and most of the rest have comparatively low unemployment. This variability is highly informative because the fifteen European countries which we consider have more or less independent labour markets in prac-

tice, despite “free” movement of labour. Using this information we see how changes in the structure of the various labour markets explain a substantial proportion of the secular fluctuations in unemployment in the various countries. In particular, we pin down some of the particular factors which enable us to understand why some European countries have been able fully to recover from the unemployment disasters of the early 1980s whereas some have not.

## References

- Abbring, J.H., G.J. van Den Berg and J. C. van Ours (1999), *The Effect of Unemployment Insurance Sanctions on the Transition Rate from Unemployment to Employment*, Tinbergen Institute, University of Amsterdam.
- Addison, J.T. and J.L. Grosse (1996), “Job Security Provisions and Unemployment: Revised Estimates”, *Industrial Relations* 35, 585–603.
- Bean, C. and C.A. Pissarides (1993), “Unemployment, Consumption and Growth”, *European Economic Review* 37(4), 837–54.
- Belot, M. and J.C. Van Ours (2000), “Does the Recent Success of Some OECD Countries in Lowering their Unemployment Rates Lie in the Clever Design of their Labour Market Reforms?”, *IZA Discussion Paper No. 147*.
- Belot, M. and J.C. Van Ours (2001), “Unemployment and Labor Market Institutions: An Empirical Analysis”, *Journal of Japanese and International Economics* 15, 1–16.
- Bentolila, S. and G. Bertola (1990), “Firing Costs and Labour Demand: How Bad is Euro Sclerosis?”, *Review of Economic Studies* 57, 381–402.
- Bertola, G., F.D. Blau and L.M. Kahn (2002), “Comparative Analysis of Labor-Market Outcomes: Lessons for the United States from International Long-run Evidence”, in: A. Krueger and R. Solow (eds), *The Roaring Nineties: Can Full Employment be Sustained?*, New York: Russell Sage Foundation, 159–218.
- Blanchard, O. and L. Katz (1997), “What We Know and Do Not Know about the Natural Rate of Unemployment”, *Journal of Economic Perspectives* 11 (1), 51–72.
- Blanchard, O. and J. Wolfers (2000), “The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence”, *The Economic Journal* (Conference Papers) 110, C1–C33.
- Booth, A., M., Burda, L., Calmfors, D., Checchi, R., Naylor and J. Visser (2000), *What Do Unions Do in Europe?*, A Report for the Fondazione Rodolfo DeBenedetti, Milan.
- Bover, O., P. Garcia-Perea and P. Portugal (1998), *A Comparative Study of the Portuguese and Spanish Labour Markets*, Banco de Espana, mimeo.
- Carling, K., B. Holmlund and A. Vejsiu (1999), “Do Benefit Cuts Boost Job Findings? Swedish Evidence from the 1990s”, *Swedish Office of Labour Market Policy Evaluation, Working Paper 1999:8*.
- Coe, D.T. and D.J. Snower (1997), “Policy Complementarities: The Case for Fundamental Labour Market Reform”, *CEPR Discussion Paper No. 1585*.
- Danish Ministry of Finance (1999), *The Danish Economy: Medium Term Economic Survey*, Copenhagen: Ministry of Finance.
- Daveri, F. and G. Tabellini (2000), “Unemployment, Growth and Taxation in Industrial Countries”, *Economic Policy* (April), 49–90.
- Davis, S. and J. Haltiwanger (1999), “Gross Job Flows”, in: O. Ashenfelter and D. Card (eds), *The Handbook of Labor Economics*, Vol. 3B, Amsterdam: Elsevier, 2711–2805.
- Dickens, R. (2000), “The Earnings Instability of Men in the UK”, *Economic Journal*.

- Disney, R. (2000), *Fiscal Policy and Employment 1: A Survey of Macroeconomic Models, Methods and Findings*, IMF, mimeo.
- Ebbinghaus, B. and J. Visser (2000), *Trade Unions in Western Europe*, London: MacMillan.
- Elmeskov, J., J.P. Martin and S. Scarpetta (1998), "Key Lessons for Labour Market Reforms: Evidence from OECD Countries' Experiences", *Swedish Economic Policy Review* 5(2), 205-252.
- Fitoussi, J-P., D. Jestaz, E.S. Phelps and G. Zoega (2000), "Roots of the Recent Recoveries: Labor Reforms or Private Sector Forces?", *Brookings Papers on Economic Activity* 1, 237-291.
- Gottschalk, P. and R. Moffitt (1994), "The Growth of Earnings Instability in the US Labor Market", *Brookings Papers on Economic Activity* 2, 217-72.
- Ham, J. and S. Rea (1987), "Unemployment Insurance and Male Unemployment Duration in Canada", *Journal of Labor Economics* 5, 325-53.
- Harkman, A. (1997), "Unemployment Compensation and Unemployment Duration - What was the Effect of the Cut in the Replacement Rate from 90 to 80 Percent?", in: Harkman, A., F. Jansson, K. Kallberg and L. Öhrn (eds), *Unemployment Insurance and the Functioning of the Labour Market*, The Swedish National Labour Market Board, Stockholm.
- Holmlund, B. (1998), "Unemployment Insurance in Theory and Practice", *The Scandinavian Journal of Economics* 100(1), 113-141.
- Hoon, H.T. and E.S. Phelps (1992), "Macroeconomic Shocks in a Dynamized Model of the Natural Rate of Unemployment", *American Economic Review* 82 (4), 889-900.
- Hunt, J. (1995), "The Effect of Unemployment Compensation on Unemployment Duration in Germany", *Journal of Labor Economics* 13, 88-120.
- Katz, L.F. (1998), "Wage Subsidies for the Disadvantaged", in: R. Freeman and P. Gottschalk (eds), *Generating Jobs*, New York: Russell Sage Foundation, 21-53.
- Katz, L. and B. Meyer (1990), "The Impact of Potential Duration of Unemployment Benefits on the Duration of Unemployment", *Journal of Public Economics* 41, 45-72.
- Layard, R., S. Nickell and R. Jackman (1991), *Unemployment: Macroeconomic Performance and the Labour Market*, Oxford: Oxford University Press.
- Lazear, E.P. (1990), "Job Security Provisions and Employment", *Quarterly Journal of Economics* 105, 699-726.
- Ljungqvist, L. and T.J. Sargent (1998), "The European Unemployment Dilemma", *Journal of Political Economy* 106(3), 514-50.
- Martin, J. (2000), "What Works among Active Labour Market Policies? Evidence from OECD Countries", *OECD Economic Studies* No.30, 79-112.
- Martin, J.P. and D. Grubb (2001), *What Works and For Whom: A Review of OECD Countries' Experiences with Active Labour Market Policies*, OECD, Paris, mimeo.
- Mortensen, D.T. and C. A. Pissarides (1999), "New Developments in Models of Search in the Labor Market", in: Ashenfelter, O. and D. Card (eds), *Handbook of Labor Economics*, Amsterdam: North Holland, Vol. 3 B, 2567-2627.
- Nicoletti, G., S. Scarpetta and O. Boylaud (2000), "Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation", *OECD Economics Department Working Paper* No. 226.
- Nickell, S.J. and R. Layard (1999), "Labour Market Institutions and Economic Performance", in: O. Ashenfelter and D. Card (eds), *Handbook of Labor Economics*, Amsterdam: North Holland, Vol. 3 C, 3029-3084.
- Nickell, S.J. (1997), "Unemployment and Labour Market Rigidities: Europe versus North America", *Journal of Economic Perspectives* 11(3), 55-74.
- Nickell, S.J., L. Nunziata, W. Ochel and G. Quintini (2002), "The Beveridge Curve, Unemployment and Wages in the OECD from the 1960s to the 1990s", in: P. Aghion, R. Frydman, J. Stiglitz and M. Woodford (eds), *Knowledge, Information, and Expectations in Modern Macroeconomics: Essays in Honor of E.S. Phelps*, Princeton: Princeton University Press, 394-431.
- Ochel, W. (2000), *Collective Bargaining (Centralization and Co-ordination)*, Ifo Institute, mimeo.
- Ochel, W. (2001), "Collective Bargaining Coverage in the OECD from the 1960s to the 1990s", *CESifo Forum Winter* 2001, 62-65.
- OECD (1990), *Employment Outlook*, Paris: OECD.
- OECD (1994), *The OECD Jobs Study, Evidence and Explanations, Vols. I and II*, Paris: OECD.
- OECD (1997), *Employment Outlook*, Paris: OECD.
- OECD (2000), *Employment Outlook*, Paris: OECD.
- Phelps, E.S. (1994), *Structural Slumps, The Modern Equilibrium Theory of Unemployment, Interest and Assets*, Cambridge MA: Harvard University Press.
- Pissarides, C. (1998), "The Impact of Employment Tax Cuts on Unemployment and Wages; the Role of Unemployment Benefits and Tax Structure", *European Economic Review* 47, 155-83.
- Pissarides, C.A., (1990), *Equilibrium Unemployment Theory*, Oxford: Basil Blackwell.
- Saint-Paul, G. (1991), "Productivity Growth and Unemployment in OECD Countries", *Working Paper No. 91-09*, DELTA: Paris.
- Scarpetta, S. (1996), "Assessing the Role of Labour Market Policies and Institutional Settings on Unemployment: A Cross Country Study", *OECD Economic Studies* 26, 43-98.
- Soskice, D. (1991), "Wage Determination: The Changing Role of Institutions in Advanced Industrialised Countries", *Oxford Review of Economic Policy* 6, 36-61.
- Van Den Berg, G., B. Van Der Klaauw and J. C. Van Ours (1999), *Punitive Sanctions and the Transition Rate from Welfare to Work*, Tinbergen Institute, University of Amsterdam.

## INSTITUTIONS IN THE ECONOMIC FITNESS LANDSCAPE

### WHAT IMPACT DO WELFARE STATE INSTITUTIONS HAVE ON ECONOMIC PERFORMANCE?<sup>1</sup>

RONALD SCHETTKAT\*

There are many potential reasons for unemployment, and the observation of unemployment is surely not sufficient in itself to justify the conclusion that labour markets are malfunctioning. But the most widely accepted explanation for high European unemployment is that European-type welfare state institutions are an impediment to economic development because they create frictions leading to sclerosis. If Europe wants to maintain its position in the world economy, it is argued, it needs to change its institutions. The typical line of reasoning proceeds as follows:

*Firstly*, it is argued on a theoretical basis that European welfare state institutions shift the economy away from Pareto efficiency.

*Secondly*, it is claimed that US institutions come closest to the “perfect market model” or “best practice” and that the economic success of the US shows the superiority of the Anglo-Saxon model.

*Thirdly*, it is argued that strong coalitions prevent the implementation of the “necessary” reforms. It is claimed that, although theoretical analysis shows what the necessary reforms are, political interests

(rent-seeking coalitions) prevent societies from adopting these recipes.

*Fourthly*, it is claimed that a delay in the “necessary” reforms will reduce international competitiveness. Globalised capitalism forces countries to bring their institutions into line with “best practice”. Just as it was once thought that competition between firms would only allow companies conforming to “best practice” to survive in the market, so globalisation will only allow the most efficient institutional arrangements to survive.

This reasoning depends on many assumptions, however. Basically, it holds for a perfect market world but not at all necessarily for the real world, with all its deviations from the perfect model. It has been shown that even small deviations from perfect market assumptions (Akerlof/Yellen 1985) can create outcomes very different from the perfect market equilibrium. Furthermore, market processes can create sub-optimal outcomes and macro results which do not fit the preferences of any (!) individual (Schelling 1978). In this situation, institutions are necessary in order to achieve the social and individual optimum. Regulations clearly limit *ceteris paribus* the scope for discretionary decisions, but only in the perfect market model are they simply restrictions and distortions; in a less perfect environment they may well create opportunities. For example, works councils may not only constrain managerial decisions but also give workers a “voice” and thus improve decision-making (Hirschman 1970, Freeman/Medoff 1984, Wolf/Zwick 2002).

Nevertheless, the perfect market model is still the point of reference in economic policy, and many “political economy” papers (see e.g. Saint-Paul 1996) likewise base their proposals on this model, albeit appending explanations of the non-implementation of the “perfect market solution”, usually based on the interest of “rent-seeking” coalitions (usually employed insiders or unions) in using their power to prevent the implementation of perfect market solutions and so to protect their rents.



\* Ronald Schettkat is Professor of Economics at the Utrecht University.

<sup>1</sup> This contribution is an extract from: Schettkat, R. (2002).

### One Best-Practice Institutional Arrangement?

Under the conditions of globalised capitalism the perfect market model predicts that only one “best practice” can survive. There is such a thing as THE optimum national institutional arrangement and ultimately all countries must adopt it. Although there are no markets for institutions, the selection process in the stylized economy will only allow “best practice” to survive. Just as firms with sub-optimal organizational structures will not survive in conditions of perfect market competition, so will international competition in conditions of globalised capitalism require countries with sub-optimal national institutional arrangements to conform to “best practice”. International competition in a globalised capitalist economy is thought to impose the optimum national institutional arrangement on countries, just as competition within markets imposes the optimum organizational structure on firms. In a diagram showing institutional arrangements, ranging from “deregulated” to “regulated” on the horizontal axis and economic fitness on the vertical axis, there would be only one peak representing the “best practice” institutional arrangement (left-hand diagram in Figure 1).<sup>2</sup>

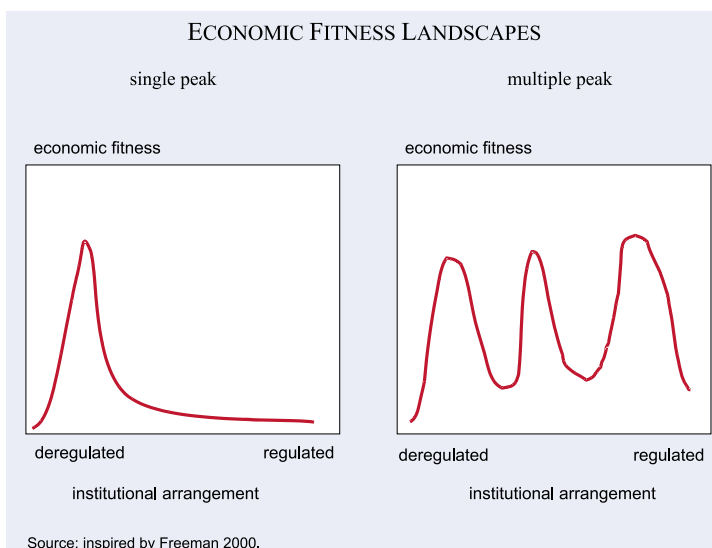
The single-peak world is intellectually attractive and deeply ingrained in economics, perhaps because it allows for clear and precise policy prescriptions. Changing institutions in the direction of the “best practice” institutional arrangement will always improve economic fitness. All that is necessary is to identify the leader in terms of economic fitness, investigate the institutional differences and eliminate them. Policy advice is a risk-free business in the

single-peak world. Once the institutional differences are identified, the policy prescription is simple: “follow the leader and you improve economic fitness”.

However, there may be more than one peak in the economic fitness landscape (right-hand panel of Figure 1). After all, different institutional arrangements may best serve economies specialising in different kinds of production. Countries may specialise according to their natural and historical (path-dependent) advantages. For example, one country may specialise in medium-tech industries using a roughly homogeneous labour force with medium skills, while another country may specialise in high-tech industries, probably in combination with a large part of the economy in low-tech industries. This is roughly the difference between the German and the US economy, with the former relying on a “medium-skilled” labour force and the latter depending on a combination of low-skilled and high-skilled workers in almost every industry (Freeman/Schettkat 1999). International trade may allow the two economies to achieve a similar level of economic fitness, so that the fitness landscape will have two peaks coinciding with different institutional arrangements. In this example, the difference in the institutional arrangements allows the economies to achieve similar fitness. Moving one country towards the institutional arrangement of the other country would reduce economic fitness, since each country already has the institutional arrangement best fitting its structure and resources.

Learning from other countries in a multi-peak economic fitness landscape is difficult and policy advice is hard to give. This world also requires a very different approach to international comparative research. It is no longer sufficient to identify the leader and then mimic the institutional arrangement of that country. Instead, the relationship between institutional arrangements and economic performance has to be carefully investigated to reach an understanding of why institutions differ and to decide

**Figure 1**



<sup>2</sup> The metaphor of a “fitness landscape” was first developed in biology to describe the ability to survive as a function of genetic code (Bak 1997: 118/119) and was to my knowledge first introduced into economics by Richard Freeman (2000).

whether they are ideally suited to the structure of the economy. To identify the impact of institutions on economic fitness, it is necessary at least to investigate whether changes in institutions lead to the assumed effect on economic fitness. Whereas it is sufficient in a single-peak world to conduct a cross-country study, the multi-peak world requires at least the investigation of initial differences and ideally a “difference in the difference” analysis.

Another complication is the multi-dimensionality of institutional arrangements, which make them difficult to identify, and the fact that indicators intended to summarise institutional arrangements are always debatable. Furthermore, economic fitness is likewise multi-dimensional and to some extent debatable. Even though the consensus may be greater in this respect than with regard to institutions, it will still be necessary to discuss which economic aspects are to be included in an economic fitness measure, whether they are compatible or competitive (for example, unemployment and inflation), and how different variables should be weighted when summarised in a single indicator. The single-peak vision requires that a single institutional arrangement be deemed to be “best practice” in relation to various dimensions of “economic fitness” and different periods of time.

Many economists may agree to describing economic fitness in terms of: (1) growth of per capita income (GDP per capita), (2) productivity growth, (3) low unemployment, (4) price stability, (5) external trade balance and (6) inequality. Leaving the more controversial inequality aside, Figure 2 shows “radar diagrams” for the ranking of six big OECD countries (Germany, France, Italy, UK, US and Japan) with respect to these economic dimensions for the averages of the 1960s, the 1970s, the 1980s and 1990s. The single-peak vision requires that the “best practice” country ranks number one in all dimensions and in all four periods, provided that there was no very great change in the institutions. In other words, the best practice country should be in the centre and country-lines should not cross each other in the radar diagrams. However, Figure 2 shows that the country-specific lines do cross, demonstrating that no country has been the top performer in all dimensions and over all periods. The single-peak vision certainly does not hold when all five dimensions of economic fitness are included in the analysis.

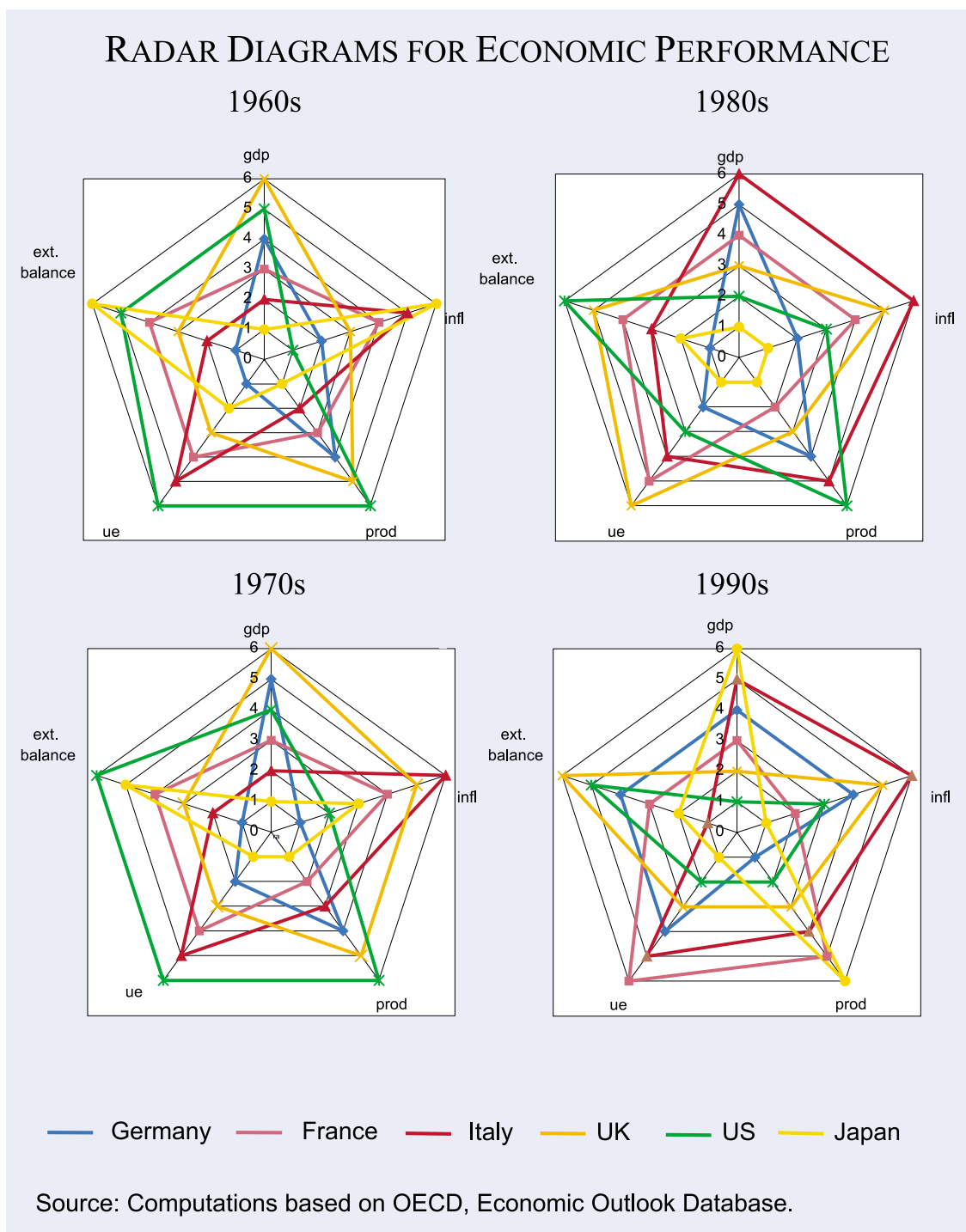
Japan came closest to being the “single-peak country” in the 1980s. In that period Japan ranked number one in 4 of the five dimensions (ranking after Germany only in export surplus), whereas US performance was average or worse in 4 dimensions of economic fitness. This explains the popularity of the Japanese model at that time. Weighting all five dimensions of economic fitness equally and taking the mean, Germany ranked number one in the 1960s and remained well ahead of the US up to the 1980s. Only in the 1990s did the US rank number one on average, and then only in one dimension: growth of per capita GDP. Apart from this, the US ranked number one only in terms of low inflation and that only in the 1960s.

### **Wage Bargaining: Institutionally Compressed Wage Distribution?**

“Equal pay for equal work” is the perfect-market outcome. That means that, controlled for individual productivity differences and working conditions, wages are equal across firms and industries. Allowing for some time to adjust to demand shocks, such differences may also cause some wage differences but these should be temporary. Traditionally, economists have favoured decentralised bargaining because it is closest to the “perfect market” model, in which neither the supply side nor the demand side have any market power and both are price-takers. Therefore, distortions in labour markets have usually been identified as the misuse of market power by unions, classified as monopolies, pushing up wages and compressing the wage structure (e.g., Monopolkommission 1994). In addition, high reservation wages (Sinn 1998) or minimum wages can compress the wage distribution at the low-skill end. Indeed, in a cross-country comparison, wage differentials decline in direct linear relation to increasing union density and other indicators characterizing the bargaining system such as the degree of centralisation of wage bargaining institutions. In Table 1 countries are ranked from left to right according to the degree of centralisation of wage bargaining confirming that pattern (panel 1, for a more comprehensive analysis Schettkat 2002).

However, these are raw wage differentials and wage distributions between countries vary for many reasons. A narrow wage distribution may indicate institutional wage compression but may

Figure 2



also be caused by a narrow skill distribution. Countries with a wide dispersion of skills are expected to have a wide dispersion of wages and if countries with decentralised wage bargaining systems also have wide distributions of skills, conclusions on the impact of institutions on wage disper-

sion drawn from the “raw” wage differentials will suffer from a spurious correlation.

Panels 2 to 5 display skill ratios derived from the OECD’s International Adult Literacy Survey (IALS), the first international comparative skill



Table 1

## Skills and wages

	US 1995	UK 1995	Germany 1993	Netherlands 1994	Sweden 1993
1. Wages					
D9 / D1	4.39	3.38	2.32	2.59	2.13
D9 / D5	2.10	1.87	1.61	1.66	1.59
D5 / D1	2.09	1.81	1.44	1.56	1.34
Skill (literacy scores)					
2. Population 15-64 years old (median)	285	276	285	292	310
3. Employed (median)	292	289	291	300	311
D5 / D1	1.41	1.36	1.22	1.24	1.22
4. Unemployed (median)	257	256	276	289	302
<i>unemployed in % of employed</i>	<i>88</i>	<i>89</i>	<i>95</i>	<i>96</i>	<i>97</i>
D5 / D1	2.14	1.52	1.32	1.44	1.30
5. $D5_{\text{employed}} / D1_{\text{unemployed}}$	2.48	1.72	1.39	1.49	1.34

Source: Computations are based on OECD Employment Outlook 1996, p. 62, for wage deciles and IALS for skill deciles.

survey among the adult population (see OECD 1997). The survey provides skill data based on standardised literacy scores ranging from 0 to a maximum of 500. The median skill scores in the IALS survey for the population in working age (panel 2 in Table 1) do not differ very much between the US, the UK, Germany and the Netherlands but are higher for Sweden. The upper end of the skill distribution also seems to be roughly similar (not displayed in Table 1), while the skill distributions at the lower end of the labour market are clearly different between the US and the continental European countries, but for the employed the difference is not so dramatic.

However, according to the hypothesis of institutional wage compression in Europe, the wage compression hypothesis, unions raised wages above the productivity of the low-skilled workers, which then caused unemployment among low-skilled workers. Continental European wage bargaining systems are alleged to “crowd out” the least skilled workers. Under the “wage compression hypothesis”, one would therefore expect that the skill score of the unemployed to be roughly equal to the skill score of the employed in the US, where the flexible wage system is claimed to allow low-skilled workers to price themselves into employment via wage concessions.<sup>3</sup> In continental European countries, on the other hand, the “wage compression hypothesis” would predict a huge gap between the skill scores of the employed and the unemployed, because unemployment should be more concen-

trated among the least skilled workers, who are allegedly pushed out of employment by excessive minimum wages. The empirical facts are exactly the reverse of what the wage compression hypothesis predicts: the median skills of the unemployed are substantially lower than that of the employed in the US (88 percent, see panel 4) whereas the median skills of unemployed in Continental Europe reaches 95 percent or more of the skills of the employed.

Because the employed are on average better skilled than the unemployed (Bell/Nickell 1996, Freeman/Schettkat 2001) the lower half of the labour market may be described by the median skill score of the employed ( $D5_{\text{employed}}$ ) at the upper bound and the first decile skill score of the unemployed ( $D1_{\text{unemployed}}$ ) at the lower bound. It emerges (in line 5 of Table 1) that the median score for the employed is 2.5 times that of the first decile of the unemployed in the US, but only about 1.3 to 1.5 times in Germany, Sweden and the Netherlands (and 1.7 in the UK). These values are much closer to the  $D5/D1$  ratios for the employed in continental Europe than they are in the US.

Apparently the wage distribution in the US is also (but not only, see Schettkat 2002) wider because the US skill distribution is wider than those in the continental European countries. Furthermore, the integrative effect of flexible US wages cannot be found in the data. The skill differential between the employed and unemployed is high in the US but comparatively low in Europe. This is in total contrast with the “wage compression hypothesis”,

<sup>3</sup> For an analysis of why “pricing-in” does not occur even in the US, see Bewley 1995.

which alleges that European-type welfare state institutions exclude low-skilled workers from employment (see Freeman/Schettkat 2001).

### Conclusions

Many welfare state institutions are blamed for causing labour market inefficiencies and consequently high unemployment in Europe. Closer inspection reveals, however, that the impact of welfare state institutions on economic performance and employment is not as clear-cut as some analysts suggest. At both the theoretical and the empirical level, the picture is ambiguous, and this study must conclude that the empirical evidence in support of the idea that European unemployment is caused by European welfare state mechanisms is extremely weak.<sup>4</sup> Ranking 20 OECD countries in terms of the “usual suspects” (i.e. redistribution, the level of minimum wages, employment protection, disposable minimum-wage income relative to net transfers, and net unemployment replacement rates, for details see Schettkat 2002) and correlating them with the ranks of the unemployment rates suggests a very diverse picture (Table 2) more in line with multi-peak than with the one-peak economic fitness landscape.

There are only two significant (at the 10 percent level) rank correlations in the table. One is between inequality of market incomes and the unemployment rate in 1999. Here, however, the coefficient has a positive sign, meaning that higher unemployment goes together with higher inequality. The situation is similar for wage differentials (D9/D1): again higher wage differentials correlate

positively with unemployment rates in 1980 but not in other periods. In short, the rank correlations between institutional variables, which may be taken to represent the “usual suspects”, do not show the expected impact on unemployment rates. For itself, of course, these correlations would be at best a hint that the deregulationists’ claim of the negative labour market effects of welfare state institutions may not hold. However, given the theoretical ambiguity and the undetermined empirical evidence, the correlations in Table 2 may rather be taken as a summary of the argument: The relation between welfare state institutions and labour market performance is highly complex and deducing its impact from the perfect market model may be very misleading.

However, there may be many reasons why the alleged negative effects of welfare state institutions are not confirmed in the analysis. First of all, the indicators used for institutional arrangements are at best approximations, and it may well be that the concerted action of institutions creates effects undiscovered in the analysis of individual institutions (system effects). In general the information on institutions is weak and for inter-temporal analysis hardly available. Furthermore, little is known about the complex interaction of institutions and economic variables, which may in fact depend on the macroeconomic situation (see Blanchard/Wolfers 2000). In many analyses this problem is circumvented by referring to the perfect market model. Compared to the perfect market situation, any deviation from “perfect market” institutions is deemed to be a rigidity and the typical analysis following this approach creates a long list of such deviations. The message then is to shape the world according to the perfect market model, usually ignoring “natural imperfections”. The deregulationists’ view gains its strength from the

<sup>4</sup> This result is in line with previous studies, see Schettkat 2002 for references.

**Table 2**

**Correlation coefficients for country rankings, unemployment rates  
and for major institutional variables, 20 OECD countries**

Unemployment rate	Inequality market incomes	Redistribution	Employment protection	Wage differentials (D9 / D1)	Minimum wage/ average wage*	Disposable minimum wage-income/net transfers*	Net replacement rate*
1980	0	0	0	+	0	0	0
1990	0	0	0	0	0	0	0
1999	+	0	0	0	0	0	0

\* = for a single.

Source: Computations based on OECD countries listed in Schettkat 2002.

theoretical comparison of real world institutions with the perfect market model, supported by sketchy empirical examples. If the perfect model were correct, globalised capitalism would indeed select the most efficient institutions and countries would have nothing to choose from. The national institutions would converge to the one optimal arrangement. However, real markets suffer from natural imperfections and many institutions may have been introduced to compensate for these imperfections, which also provide freedom for different national institutional arrangements.

It can be concluded that knowledge of the impact of institutional arrangements on economic variables needs to be improved and presented in detailed bi-country studies (e.g. Freeman/Schettkat 2002). There is also a need for a better understanding of “how markets really work” (Gordon 1990) as it is expressed in the program of many microeconomic studies. However, institutions will always have many “side-effects” – both positive and negative – which will be hard to identify and even harder to quantify.

## References

- Akerlof, G. and J. Yellen (1985), “Can Small Deviations from Rationality Make Significant Differences to Economic Equilibria?”, *American Economic Review* 75(4), 708–20.
- Bak, P. (1997), *How Nature Works: The Science of Self-Organized Criticality*, Oxford: University Press.
- Bewley, T. (1995), “A Depressed Labor Market as Explained by Participants”, *American Economic Review* 85(2), 250–54.
- Blanchard, O. and J. Wolfers (2000), “The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence”, *The Economic Journal* 110, c1–c33.
- Freeman, R.B. (2000), “Single Peaked vs. Diversified Capitalism: The Relation Between Economic Institutions and Outcomes”, *NBER Working Paper* 7556.
- Freeman, R.B. and J.M. Medoff (1984), *What Do Unions Do?*, New York: Basic Books.
- Freeman, R.B. and R. Schettkat (1999), *Differentials in Service Industry Employment Growth: Germany and the US in the Comparable German American Structural Database*, European Commission, Report.
- Freeman, R.B. and R. Schettkat (2001), “Skill Compression, Wage Differentials and Employment: Germany vs. the US”, *Oxford Economic Papers* 3, 582–603.
- Gordon, R. (1990), “What is New-Keynesian Economics?”, *Journal of Economic Literature* 28, 1115–71.
- Hirschman, A.O. (1970), *Exit, Voice, and Loyalty. Responses to Decline in Firms, Organizations, and States*, Cambridge Mass.: Harvard University Press.
- Monopolkommission (1994), *Mehr Wettbewerb auf allen Märkten*, Baden-Baden: Nomos Verlagsgesellschaft.
- Nickell, S. and B. Bell (1996), “Changes in the Distribution of Wages and Unemployment in the OECD Countries”, *American Economic Review* 86 (5), Papers and Proceedings, 302–8.
- OECD (1997), *Literacy Skills for the Knowledge Society, International Adult Literacy Survey*, Paris.
- OECD (1999), *Employment Outlook*, Paris.
- Saint-Paul, G. (1996), “Exploring the Political Economy of Labour Market Institutions”, *Economic Policy* 23, 265–300.
- Schelling, T. (1978), *Micromotives and Macrobehavior*, New York: W.W. Norton & Company.
- Schettkat, R. (2002), “Institutions in the Economic Fitness Landscape: What Impact do Welfare State Institutions have on Economic Performance?”, *IZA Discussion Paper* 696.
- Sinn, H.-W. (1998), “Der Sozialstaat in der Zwickmühle”, *Handelsblatt*, November 24, 53.
- Wolf, E. and T. Zwick (2002), “Partizipation erhöht Produktivität”, *ZEW News*, March 2002, Mannheim: Zentrum für Europäische Wirtschaftsforschung.



## THE CONTINGENCY THESIS OF COLLECTIVE BARGAINING INSTITUTIONS

FRANZ TRAXLER\*

**E**mployment-enhancing policies are a collective good. Hence, they are burdened with a collective action problem. While there is general interest in a high level of employment, any single actor in the labour market may be tempted to take a free ride, thus externalising the costs of employment policies to the “others”. The possibility of overcoming this collective action problem depends on whether institutions exist that set an incentive for the actors to co-operate for the sake of employment (that is to internalise the costs of their self-interested strategies).

In this respect, the institutions devised to regulate bargaining over employment terms have attracted attention, since labour costs are commonly assumed to affect (un)employment. From a cross-nationally comparative perspective, the bargaining institutions are all the more interesting, since their structures vary widely throughout the OECD countries. To the extent to which these institutional differences translate into differences in labour cost growth, they are also expected to bring about differing employment effects according to neo-classical reasoning.

### **The complexity of bargaining and its institutional implications**

To study the comparative impact of (national) differences in the bargaining institutions on unemployment, one has to clarify the dimensionality of

the collective action problem of bargaining. In principle, co-operation on behalf of employment (that is internalising the negative externalities of distributional conflicts) involves three types of interaction: (a) the interaction between the manifold bargaining units; (b) the interaction between these bargaining units and political and monetary authorities; and (c) the interaction between the representatives of each bargaining unit and their rank-and-file.

Mainstream reasoning on the socio-economic effects of the bargaining institutions has focused on the interaction of type (a) and (b). In the case of type (a) the debate has concentrated on centralisation as the decisive institutional property of bargaining (Cameron 1984, Calmfors and Driffill 1988). Other accounts have argued that coordination of the distinct bargaining units matters more than centralisation, when it comes to internalising negative externalities (Soskice 1990). From this perspective, cross-sectoral centralisation (understood as the level at which the collective agreement is formally concluded) is just one special form of macroeconomic coordination among other, more decentralised forms of coordination. Other contributions have emphasised that the effectiveness of macroeconomic coordination is contingent on the sectoral structure of the economy, i.e. the relative strength of the internationally exposed sector and the sheltered sector (Garrett and Way 1995). Research on the interactions of type (b) has focused on how alternative bargaining institutions relate to alternative political regimes, mainly operationalised as party composition of governments (Lange and Garrett 1985) and to alternative monetary regimes, generally operationalised as the degree of central bank independence (Hall and Franzese 1998).

The studies of both interaction type (a) and type (b) centre on how the elites (that is the representatives) of the employees, the employers and other actors interact with one another. Therefore they refer to what one may call the horizontal dimension of the collective action problem of bargaining.

---

\* Franz Traxler is Professor of Industrial Sociology at the University of Vienna.

In comparison to this, type (c) represents the vertical dimension of the problem: the interaction between the representatives of the employees and employers and their rank-and-file. Effective co-operation requires resolving the horizontal as well as the vertical co-operation problem. Coordination efforts launched by the elites of the two sides of industry cannot work without the support from their rank-and-file. The economic incentives for co-operation set by the government and the central bank, as described in studies dealing with interaction (b), can hardly stimulate such support, since they merely address the representatives of organised business and labour. The vertical problem of collective action remains thus endemic: any individual contract or any local collective agreement may bypass higher-level agreements on co-operation. Empirical evidence suggests that the vertical problem is even more severe than the horizontal problem. When experiments with income policy and “pacts” on wage moderation and employment fail, they usually do so due to insurmountable problems of vertical co-operation manifest in excessive wage drift, wildcat strikes and other forms of non-compliance.

This means that the vertical problem deserves no less attention than the horizontal problem, which has been so hotly debated in the literature. However, one might question this point by arguing that it is precisely the centralisation of bargaining at the cross-sectoral level that resolves both problems at once. Such reasoning overestimates the governance capacity of hierarchy, as formalised in centralised structures, in a context of voluntary institutions: the central-level parties to collective bargaining (i.e. the peak associations of the unions and employer organisations) are usually voluntary associations which can hardly bind their members simply by fiat (Crouch 1993). Moreover, the impact of centralisation on coordination is contradictory. On the one hand, centralisation fosters attempts at horizontal coordination, since central-level actors tend to internalise externalities due to their encompassing domain (Olson 1982); on the other, growing centralisation can even exacerbate the problems of vertical coordination for a variety of reasons. The opportunity of the rank- and-file to participate in the association’s decision-making process decreases with growing centralisation. As a consequence, the propensity of the rank- and-file to comply with decisions (i.e. central-level collective agreements) will decline. Furthermore, cen-

tralisation tends to politicise bargaining, since the influence of organisational politics and ideology on the demands and bargaining outcomes grows, while market forces will become less influential in determining the bargaining process. Centralisation also renders the distributional outcome of a certain agreement more transparent (Rueda and Pontusson 1997). All this fuels distributional conflicts among the distinct groups covered by the central agreement and thus threatens to undermine the agreement’s effectiveness.

### **The contingency hypothesis on the performance of bargaining**

The upshot of the above reasoning is that the horizontal collective action problem of bargaining and the vertical problem must be treated as two dimensions which are independent of each other because they each impose a conflicting logic of collective action on the bargaining units. While centralisation facilitates horizontal coordination, it makes any vertical coordination more difficult. This brings us to four hypotheses on the performance of bargaining, i.e. the ability of bargaining to internalise externalities.

- The performance of any kind of horizontal coordination efforts is contingent on whether the vertical problem of coordination can be resolved.
- The economic performance of horizontally coordinated, centralised bargaining systems will be superior only, when effective means of vertical coordination are given. If they are lacking, then the performance of such systems will be worse than any alternative setting.
- Due to their conflicting logic, resolving the vertical problem of coordination requires special mechanisms which are distinct from those designed to cope with horizontal coordination.
- For the above reasons, voluntary institutions such as unions and employer associations are hardly able to assure effective vertical coordination. Hence, they need external support which no other actor than the state can provide. This need increases with growing degrees of centralisation. Therefore the performance of horizontally coordinated, centralised bargaining is contingent on state provisions for ensuring vertical coordination (i.e. compliance of lower-level actors).

Comparative empirical research based on an elaborate data base (covering 20 OECD countries for the period from 1970 to 1996) (Traxler 2002; Traxler 2003; Traxler, Blaschke and Kittel 2001) strongly supports the contingency thesis with regard to both types of horizontal interaction. When summarising these findings in the following paragraphs, we cannot go into details of either operationalisation or econometric model specifications for the sake of brevity. Most importantly, the capacity for vertical coordination is operationalised as “statutory bargaining governability”. This is based on Traxler and Kittel (2000), who have shown that statutory provisions for legal enforceability of collective agreements and for the peace obligation during the agreements’ validity significantly improve the capacity for vertical coordination (i.e. bargaining governability). The measure of bargaining centralisation is taken from Traxler, Blaschke and Kittel (2001). According to an assessment of alternative centralization measures this is one of the two best measures available (Kenworthy 2001). Performance is measured in terms of growth of unit labour costs, inflation and unemployment. Since the results for these performance indicators, as found by the above studies of the contingency thesis, point to the same direction, they can be discussed altogether. It should be noted, however, that the explanatory power of the models is lower (but still statistically significant) in the case of unemployment, as compared to labour costs and inflation. This indicates that bargaining has primarily nominal effects, whereas unemployment is also strongly affected by other factors such as macroeconomic demand (Soskice 2000).

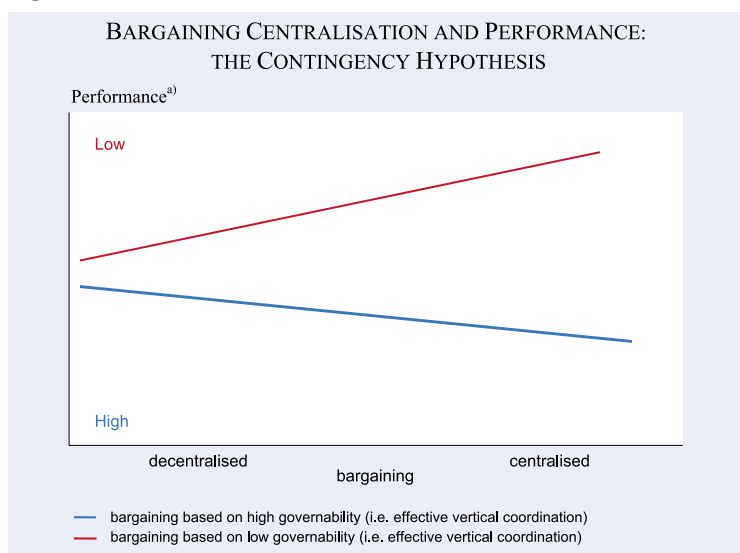
As already mentioned, there is a debate on whether centralisation or coordination actually matters, as far as type (a) of the horizontal interaction process is concerned. Hence, it is reasonable to apply the contingency hypothesis to centralisation as well as coordination of bargaining. The results for centralisation are documented in Figure 1. Most essentially, bargaining centralisation brings about its widely presumed beneficial effects only when backed by high bargaining governability (i.e. effective vertical coordination). Yet in industrial relations systems

burdened with low governability, performance significantly declines with growing bargaining centralisation, such that centralised bargaining is indeed the worst case in these circumstances. Overall, the contingency effect of bargaining centralisation is evident in the fact that centralisation buttressed by effective vertical coordination and centralisation plagued by ineffective vertical coordination cause contrasting performance outcomes (Traxler 2003). As an implication, the performance of effective and ineffective vertical coordination progressively diverges, when bargaining becomes more centralised.

Turning from centralisation to horizontal coordination in the broad sense, one has to specify its possible manifestations. As the cross-national comparison of bargaining systems suggests, one should differentiate between four main categories (Traxler, Blaschke and Kittel 2001):

- The first category is peak-level coordination in the course of which the peak associations of the unions and employer associations have the leading role in the coordination process. Depending on the number of actors involved, peak-level coordination may be bipartite (which corresponds with centralised bargaining), tripartite (if the state joins the bargaining process as a third party) or unilateral (when only one peak of the two sides of industry is engaged in coordination by means of internally synchronising the bargaining policies of its affiliates).

Figure 1



<sup>a)</sup> Macroeconomic performance measured in terms of growth of unit labour costs, inflation and unemployment. All figures are heuristic functions of the hypothesised relationship, since the degree of observed bargaining centralisation relative to the theoretical zero and full centralisation is not known.

Source: Traxler (2003, p. 16).

- There is also the possibility of coordination by pattern bargaining, resting on the leading role of a certain bargaining unit or a cartel of contiguous bargaining units below peak level. In most countries where pattern bargaining takes place, the bargaining units representing the metal industry set the pattern for bargaining in the other sectors of the economy.
- Third, horizontal coordination may authoritatively be imposed by the state within a statutory framework of compulsory income policies. State-imposed coordination thus contrasts with the above forms of voluntary coordination.
- Finally, collective bargaining may remain uncoordinated.

Figure 2 shows the performance of these four categories of bargaining, as found by cross-nationally comparative analysis (Traxler, Blaschke and Kittel 2001, Traxler and Kittel 2000). In a way analogous to bargaining centralisation, there is a contrasting performance effect of peak-level coordination, depending on whether bargaining governability is high or low. This is because all forms of peak-level coordination are comparatively centralised settings. As regards the other categories, bargaining governability is insignificant. In the case of pattern bargaining this follows from its rather decentralised coordination mode, such that it needs less vertical coordination than its peak-level counterpart. There is no significant interaction of bargaining governability with state-imposed coordination, since both horizontal and vertical compliance is

authoritatively enforced under these circumstances. Last but not least, any provision for vertical coordination is pointless in a context of uncoordinated bargaining. This means that the contingency effect is present only as far as peak-level coordination is concerned. The findings also indicate that there is no “one best way” of bargaining. Peak-level coordination backed by high governability as well as pattern bargaining show above-average performance. However, peak-level coordination performs worst, if governability is low. In comparison to these settings, uncoordinated bargaining and state-imposed coordination record an average performance.

The findings on centralisation (Figure 1) complement the findings on horizontal coordination (Figure 2). This is because the scale of the contingency effect of vertical coordination increases with centralisation. As the detailed quantitative analysis reveals (Traxler 2003): distinct degrees of centralisation do not differ significantly in performance, when bargaining governability is high; likewise, rather decentralised forms of bargaining do not show significant differences in performance, regardless of whether bargaining governability is high or low. This confirms the proposition that there are functionally equivalent settings. Depending on the given configuration of bargaining governability, the performance of decentralised bargaining may be similar to more centralised settings. Therefore, centralisation (in combination with high governability) is just one specific form of effective coordination along with other, more decentralised modes of coordination.

**Figure 2**

**BARGAINING COORDINATION AND PERFORMANCE: THE CONTINGENCY HYPOTHESIS**

Performance <sup>a)</sup>				
Low				Voluntary peak-level coordination with low bargaining governability
Medium	Uncoordinated bargaining			State-imposed coordination
High		Pattern bargaining		Voluntary peak-level coordination with high bargaining governability
		Low	Medium	High
		Vertical coordination		

Notes: see Figure 1  
Source: Traxler, Blaschke and Kittel (2001, p. 247).

Empirical research in the contingency hypothesis has also addressed type (b) of the horizontal interaction process. In this respect, the focus is on the interaction between bargaining coordination and the monetary regime (Traxler, Blaschke and Kittel 2001, Traxler 2002). Put more specifically, the question is whether alternative bargaining settings differ in their responsiveness to monetary signals, that is, in their ability to internalise the economic effects of a given monetary regime. The finding (which is common to differing model specifications of this ques-

tion) is that the main divide is between horizontally coordinated and uncoordinated bargaining systems. While uncoordinated bargaining is not responsive to the monetary regime, any category of coordinated bargaining is responsive in the way one would expect: a shift to a more restrictive monetary regime significantly dampens labour costs and inflation. The explanation for this divide is that a strategic interaction between the bargainers and the central bank is possible only in a situation of coordinated bargaining. Given uncoordinated bargaining, it is not rational for any single bargaining unit to internalise monetary policy effects because none of the numerous units is so encompassing that its bargaining policy has a noticeable macroeconomic effect. Conversely, the monetary authorities cannot deliberately target the bargainers due to the fragmentation of the bargaining system. In contrast to this, the macroeconomic relevance of coordinated bargaining sets an incentive for the bargainers to respond to the monetary regime. Likewise, the monetary authorities can strategically target the bargainers. It is worth mentioning that the distinct categories of voluntary coordination differ in what kind of monetary parameter they are responsive to. Whereas peak-level coordination with high governability and pattern bargaining significantly interact with the degree of central bank independence, peak-level coordination with low governability responds far more to actual monetary policy (Traxler 2002). This difference reflects the differing capacities for internalising externalities, as summarised in Figure 2: Due to their high capacity for wage moderation, peak-level coordination with high governability and pattern bargaining are best prepared to anticipate the consequences of monetary conservatism, as institutionalised in an independent central bank. Peak-level coordination characterised by low governability is less able to do so because of poor capacity for vertical coordination. Hence, an actual shift to restrictive monetary policy is needed to moderate wage demands in this case. In other words, monetary contraction may compensate for a lack of high bargaining governability, insofar as this enables peak-level coordination to internalise externalities even when bargaining governability is low.

Turning from the nominal to the real effects, one finds a result analogous to that for interaction (a) of the bargaining process: the effect on unemployment of the interaction between bargaining and the monetary regime is less clear than in the case of labour costs and inflation. What can be said, how-

ever, is that a conservative (that is stability-oriented) monetary regime is most likely to cause significant real costs (in terms of growing unemployment) in a situation of uncoordinated bargaining. This is because any possibility of strategic interaction is absent. Hence, the monetary authorities can discipline uncoordinated bargaining only *ex post* by means of monetary contraction bringing about an increase in unemployment which in turn significantly restricts the scope for further wage increases.

### Conclusions

There are two main conclusions that can be derived from the above findings. In scholarly respects, they explain why recent elaborate studies which have focused on the horizontal interaction of the bargaining process have not found any systematic effect of bargaining on performance (OECD 1994, 1997, Traxler and Kittel 2000, Traxler, Blaschke and Kittel 2001). This is because centralisation as well as coordination of bargaining produce contrasting performance effects, contingent on their capacity for vertical coordination. This underscores the need to combine studies in the performance of bargaining with a systematic analysis of the problem of vertical coordination in general and rank-and-file compliance in particular.

As regards policy implications, the conclusion is that debates on the reform of bargaining cannot simply centre on the degree of centralisation or coordination. Given the contingency of bargaining effects, the outcome of a certain change in the bargaining system may significantly vary with the context (i.e. the existing statutory framework for bargaining governability and the monetary regime). For instance, the decentralisation of bargaining, which has become so popular as a means of improving performance, may even deteriorate the macroeconomic performance of a bargaining system under certain circumstances. In particular, this holds true for decentralisation causing a shift from coordinated to uncoordinated bargaining in the case of systems capable of effective vertical coordination. Moreover, the above findings indicate that institutional differences in the bargaining systems translate into nominal rather than real performance effects. This suggests that the reform of bargaining can hardly be seen as the focal policy area, when it comes to stimulating employment.



## References

- Calmfors, L. and J. Driffill (1988), "Bargaining Structure, Corporatism and Macroeconomic Performance", *Economic Policy* 6, 13–61.
- Cameron, D. (1984), "Social Democracy, Corporatism, Labour Quiescence and the Representation of Economic Interests in Advanced Capitalist Countries", in: J. H. Goldthorpe (ed), *Order and Conflict in Contemporary Capitalism: Studies in the Political Economy of Western European Nations*, Oxford: Clarendon Press, 148–57.
- Crouch, C. (1993), *Industrial Relations and European State Traditions*, Oxford: Clarendon Press.
- Garrett, G. and C. Way (1995), "The Sectoral Composition of Trade Unions, Corporatism, and Economic Performance", in: B. Eichengreen, J. Frieden and J. von Hagen (eds), *Monetary and Fiscal Policy in an Integrated Europe*, Berlin: Springer, 38–61.
- Hall, P. and R.J. Franzese (1998), "Mixed Signals: Central Bank Independence, Coordinated Wage Bargaining, and European Monetary Union", *International Organisation* 52, 505–35.
- Kenworthy, L. (2001), "Wage Setting Measures: A Survey and Assessment", *World Politics* 54 (1), 57–98.
- Lange, P. and G. Garrett (1985), "The Politics of Growth: Strategic Interaction and Economic Performance in the Advanced Industrial Democracies, 1974–1980", *Journal of Politics* 47, 792–27.
- OECD (1994), *The OECD Jobs Study. Evidence and Explanations. Part II*, Paris: OECD.
- OECD (1997), "Economic Performance and the Structure of Collective Bargaining", in: OECD, *Employment Outlook*, Paris: OECD, 63–92.
- Olson, M. (1982), *The Rise and Decline of Nations*, New Haven/London: Yale University Press.
- Rueda, D. and J. Pontusson (1997), "Wage Inequality and Varieties of Capitalism", *Institute for European Studies Working Paper*, no. 97.6, Ithaca: Cornell University.
- Soskice, D. (1990), "Wage Determination: The Changing Role of Institutions in Advanced Industrialised Countries", *Oxford Review of Economic Policy* 6, 36–61.
- Soskice, D. (2000), "Macroeconomic Analysis and the Political Economy of Unemployment", in: T. Iversen, J. Pontusson and D. Soskice (eds), *Unions, Employers, and Central Banks*, Cambridge: Cambridge University Press, 38–74.
- Traxler, F. (2002), "Bargaining Institutions and the Monetary Regime", forthcoming in: *Journal of European Public Policy*.
- Traxler, F. (2003), "Bargaining (De)Centralisation, Macroeconomic Performance and Control over the Employment Relationship", *British Journal of Industrial Relations* 41, 1–27.
- Traxler, F., S. Blaschke and B. Kittel (2001), *National Labour Relations in Internationalised Markets*, Oxford: Oxford University Press.
- Traxler, F. and B. Kittel (2000), "The Bargaining System and Performance: A Comparison of 18 OECD Countries", *Comparative Political Studies* 33, 1154–90.

## EVASION OF VALUE-ADDED TAXES IN EUROPE: IFO APPROACH TO ESTIMATING THE EVASION OF VALUE-ADDED TAXES ON THE BASIS OF NATIONAL ACCOUNTS DATA (NAD)

ANDREA GEBAUER\*

RÜDIGER PARSCHE\*\*

Value-added tax is among the most remunerative of taxes and thus plays a leading part in many tax systems. Consequently, small increases or even reductions in revenues, the latter almost certainly due primarily to tax evasion in the VAT sector and especially to carousel fraud<sup>1</sup>, create considerable commotion. However, almost no official figures are available for estimating the extent of VAT evasion. Some time ago, therefore, the Ifo Institute developed a new approach to calculate the loss in tax revenues in the VAT sector via a macroeconomic estimate of theoretical tax revenues on the basis of the NAD, and quantified tax evasion rates for selected EU countries (Nam et al. 2001; Dziadkowski et al. 2002). In measuring the theoretical revenues from VAT, the macroeconomic basis for VAT assessment was initially derived from national accounts data, input-output tables and special statistics. This allowed a relatively precise calculation of the weighty blocks of the theoretical assessment basis, i.e. purchases by private households as well as intermediate input and investments by the state, credit institutions and insurance companies not eligible to input-tax deduction.

The next step was to split the principal components of national accounts data (private consumption, intermediate input and investments by the state, credit institutions and insurance companies, private non-profit organizations as well as the other

sectors not eligible to input-tax deduction<sup>2</sup>) up into tax-liable and tax-exempt items. The theoretical VAT revenues could then be derived by assigning the corresponding (normal or reduced) tax rates to the tax-liable components. If an item cannot be unequivocally assigned to a single tax rate, but consists of various sub-items subject to different tax rates, then a weighted VAT rate must be applied. The weighting is either determined from more detailed statistical sources or is estimated.

After a flat-rate adjustment of the revenue differences due to the gaps between the original and cash-point values of the VAT as well as to payment periods, their overruns, extensions or temporary tax waivers (especially due to insolvencies), an ex post facto estimate of the hypothetical VAT revenues in selected EU countries was obtained and presented in Table 1.

The collection rate could then be determined by comparing the collected revenue (on the basis of the rate-setting country) with the estimated revenue:

$$\text{Collection rate} = \text{Collected VAT revenue} \div \text{Hypothetical VAT revenue}$$

Because this collection rate will always be less than 100 percent, the difference is obtained as the tax evasion rate:

$$\text{Tax evasion rate} = 100 - \text{Collection rate (\%)}$$

The VAT evasion rates determined in this way for selected European countries during the period 1994 to 1996 (1991 to 1993) are also shown in Table 1.

A closer examination of these results reveals that very different levels of VAT evasion can be observed in the various European countries. Thus the evasion rates recorded during the investigated period extend over a large range from 0.4 percent (cf. Great Britain 1991) to 35.5 percent (cf. Italy 1992). It is also remarkable that the country-specific evasion rates remained relatively stable during this period. Thus the Netherlands, Denmark and France show very low evasion rates throughout this period, whereas Italy, Spain and Belgium are uncontested front-runners with particularly high evasion rates. Moreover, a certain south-north gradient can be observed with regard to VAT evasion, so that evasion rates tend to decline the further north the country lies. Only Belgium, whose evasion rate rose from 18.0 to 20.1 percent during the investigated period, is a clear exception to this pat-

\* Andrea Gebauer is researcher at the Ifo Institute, Munich.

\*\* Rüdiger Parsche is head of the department of Public Finance of the Ifo Institute, Munich.

<sup>1</sup> Moving goods between businesses in various jurisdictions to capitalize on differences in VAT rates.

<sup>2</sup> Especially the housing industry, the health and education services, but also smaller sectors such as the post office.

**Table 1**  
**Comparison of hypothetical VAT revenue with collected revenue for 1994-96 (in billions of the national currency)**

	1994 (1991)			1995 (1992)			1996 (1993)		
	Hypothetical revenue	Collected revenue	Evasion rate (%)	Hypothetical revenue	Collected revenue	Evasion rate (%)	Hypothetical revenue	Collected revenue	Evasion rate (%)
Belgium (BEF)	667.3	547.3	18.0	686.4	549.8	19.9	720.3	575.8	20.1
Denmark (DKR)	95.7	91.4	4.5	99.6	95.4	4.3	105.1	101.2	3.8
France (FF)*	560.3	514.8	8.1	569.1	520.9	8.5	571.1	515.1	9.8
Germany (DM)	239.6	235.7	1.6	247.3	234.6	5.2	256.3	237.1	7.5
Great Britain (GBP)*	38.7	38.5	0.4	41.1	39.3	4.4	43.5	40.7	6.5
Greece (DRS)	2,160.0	1,735.5	19.8	2,438.8	1,939.6	20.5	2,712.1	2,160.5	20.3
Italy (ITL)*	121,448.8	81,112.0	33.2	130,373.7	84,062.0	35.5	133,594.1	86,947.0	34.9
Netherlands (HFL)	42.7	41.1	3.8	44.3	43.6	1.7	47.3	46.5	1.6
Portugal (ESC)	1,259.1	1,084.5	13.9	1,408.6	1,225.6	13.0	1,509.0	1,273.8	15.6
Spain (PTS)	4,482.2	3,569.0	19.2	5,127.8	3,791.0	24.6	5,404.8	4,080.0	24.0

\*Values for 1991-93.

Source: Nam, Parsche and Schaden (2001), Measurement of Value Added Tax Evasion in Selected EU Countries on the Basis of National Accounts Data, ifo studies 47 (2), p. 135.

tern with an evasion rate significantly higher than its immediate neighbours.

In general, however, increasing rates of tax evasion can be noted in some countries during the period examined. Thus the German rate rose from 1.6 percent in 1994 to 7.5 percent in 1996. Only in the Netherlands did the VAT evasion rate drop significantly during the examined period from 3.8 percent (1994) to 1.6 percent (1996). A slight decline was also observed in the case of Denmark, where the rate dropped from 4.5 percent to 3.8 percent. In addition, small reductions could be observed between 1995 and 1996 in the cases of Greece and Spain, although these are hardly significant in view of the very high evasion rates existing in these countries. The assumption of a generally increasing rate of VAT evasion in the single market (Europäische Kommission 2001) is also supported by new results from Germany. They show an increase of the evasion rate from 7 percent to 9.5 percent in the period from 1997 to 2001 (cf. Table 2), although it should be noted that there is only a limited degree of direct comparability with earlier results due to the change in the macroeco-

nomical accounting system which had taken place in the intervening period.

A closer look at the year-by-year development of the German tax-evasion rate reveals a certain slowdown in the increase in VAT evasion in the period from 1997 to 2000, or at least no further sign of the significant rise observed for the earlier period. A temporary significant decline of this rate can even be seen in 1999. However, it must be noted that this result was affected by changes in taxation law relating to the tax-assessment basis which yielded additional revenues (cf. Tax Relief Law 1999/2000/2002). As the estimate of the hypothetical revenues included the assumed additional VAT revenues produced by the changes in this law, the decline in evasion rate may be due to a certain underestimation of these revenues. Since the year 2000, however, a significant rise again occurred, and the evasion rate even reached a record level of 9.5 percent in the year 2001.

### Explaining the diverse rates of VAT evasion in an international comparison

The fact that a certain north-south gradient can be observed in VAT evasion rates is not surprising. Thus Italy and Greece are characterized by a relatively low tax morale of their citizens, complicated legislation and an inefficient tax administration as well as high inflation coupled with automatic wage adjustments. These factors are the principal reasons for the high and repeatedly censured tax evasion rates in these countries (Spanakakis and Martelli 1981). Italy in

**Table 2**  
**VAT evasion in Germany in the years 1997 to 2001**

	Tax evasion rates (%)				
	1997	1998	1999	2000	2001
Tax evasion rate	7.0	7.0	5.9	7.4	9.5

Source: Calculations of the Ifo Institute.

particular has repeatedly made headlines in the past by attempting to clean up its national budget by means of tax amnesties. As such amnesties tend to reward dishonesty because they offer no incentives to return to an honest payment of taxes. They can undermine the entire tax system and in the long term even lead to lower tax revenues or force the state to impose excessive tax rates. All this leads in the extreme case to a situation in which ever more people become tax evaders, in particular because they do not see why they should compensate the evasions of others and can also be relatively sure that the next amnesty will soon be forthcoming. In fact, the Italian attempts to deal with the problem are blatantly unsuccessful: they merely represent a source of funds for the short-term improvement of the domestic budget. This is evident from the fact that the rate of tax evasion rose significantly after the last major amnesty of 1991, which allowed the evaders to escape the consequences of their tax crimes without having to declare their real income or assets situation.

Another major reason for the different trends in the various countries could lie in the varied density of monitoring. Thus Germany experiences problems in this regard due to its federal structure and the associated separation of monitoring responsibilities. These problems are in many cases exacerbated still further by insufficient staffing of the responsible authorities, obsolete technical equip-

ment and incompatible computer systems. In contrast, Scandinavian countries such as Denmark apply a very rigid state monitoring system which makes fiscal fraud significantly harder. France too appears to possess advantages in this sector thanks to its highly centralized administration.

As against this, the differences in VAT rates appear to be of secondary importance in explaining the different evasion rates (cf. Table 3). Although both Belgium and Italy have very high VAT rates, precisely a country such as Denmark, which has no reduced rate and also has the highest normal rate by a wide margin, namely 25 percent, has one of the lowest tax evasion rates. The relatively high evasion rates in Spain and Portugal cannot be explained by particularly high VAT rates either. In fact, their VAT rates are among the lowest in Europe, at 16 percent and 18 percent respectively.

“Long frontiers” cannot be used as an argument for differences in evasion rates either, for then countries such as Germany and France would have an equally poor showing as Italy and Spain, and Belgium would do significantly better. However, no such picture emerges from the results obtained.

All in all, these differences really do seem to result mainly from the differing attitudes of the population to paying taxes as well as from differences in monitoring density.

**Table 3**  
**VAT rates in selected European countries (July 1, 2002)**

Country	Local name for VAT	Tax rates in %		
		Normal rate	Reduced rates <sup>a)</sup>	Zero rate <sup>b)</sup>
Belgium	Taxe sur la valeur ajoutée (TVA) or Belasting over de toegevoegde waarde (BTW)	21	1 ; 6 ; 12	Yes <sup>c)</sup>
Denmark	Omsaetningsavgift (MOMS)	25	-	Yes <sup>c)</sup>
France	Taxe sur la valeur ajoutée (TVA)	19.6	2,1 ; 5,5	-
Germany	Umsatzsteuer	16	7	-
Great Britain	Value added tax (VAT)	17.5	5	Yes
Greece	Foros prostithemenis axias (FPA)	18	4 ; 8	Yes
Italy	Imposta sul valore aggiunto (IVA)	20	4 ; 10	Yes <sup>d)</sup>
Netherlands	Omzetbelasting (OB) or Belasting over de toegevoegde waarde (BTW)	19	6	-
Portugal	Imposto sobre o valor acrescentado (IVA)	19	5 ; 12	-
Spain	Impuesto sobre el valor añadido (IVA)	16	4 ; 7	-

<sup>a)</sup> Especially for certain groups of essential goods and for certain social and cultural services. - <sup>b)</sup> Zero rate = Tax exemption with input tax deduction. This is mentioned here only where it applies not only to export rates but also to certain domestic rates. - <sup>c)</sup> For newspapers. - <sup>d)</sup> For construction land, raw gold, metal waste.

Source: Federal Ministry of Finance (2002), Fachblick Finanz- & Wirtschaftspolitik: Die wichtigsten Steuern im internationalen Vergleich, p. 34.

Table 4

## Estimated VAT evasion and shadow economies in selected EU countries (1994-96)

	Belgium	Denmark	France	Germany	Great Britain	Greece	Italy	Netherlands	Portugal	Spain
VAT evasion rate in %: mean values for 1994-96	19.3 (4)	4.2 (8)	8.8* (6)	4.8 (7)	3.8* (9)	20.2 (3)	34.5* (1)	2.4 (10)	14.2 (5)	22.6 (2)
Share of the shadow economy as a % of GNP: mean values for 1994-95 determined by the currency-demand approach	21.5 (5)	17.8 (6)	14.5 (7)	13.5 (9)	12.5 (10)	29.6 (1)	26.0 (2)	13.7 (8)	22.1 (4)	22.4 (3)
* Mean values for 1991-93; ranking in brackets.										
Source: Nam, Parsche and Schaden (2001), Measurement of Value Added Tax Evasion in Selected EU Countries on the Basis of National Accounts Data, ifo studies 47 (2); Schneider and Enste (2000), Shadow Economies: Size, Causes and Consequences, Journal of Economic Literature 38 (1), p. 135.										

### Assessment of the Ifo approach to estimate VAT evasion

A major problem in estimating VAT evasion by national accounts is naturally the availability of the necessary data. Within the scope of the calculations presented here, the VAT revenues were estimated exclusively on the basis of official statistics. There are naturally certain limits to such an approach, as these statistics are as a rule highly aggregated and the fine points relevant to taxation (tax-free vs. tax-liable supplies, normal vs. reduced rates) are not always evident from the publications. In such cases, estimates must be made. In addition, a series of individual regulations relevant to VAT were not quantified within the scope of this calculation.

Beyond this, the macroeconomic accounting procedures applied in the various European countries do not have a standardized structure but are characterized by national peculiarities which must be considered in the estimate but are often not recognizable at first sight. In addition, the quality of the estimate naturally depends on the available data.

A comparison of the results obtained by the Ifo Institute with those of Schneider and Enste (2000), who used a currency-demand approach to calculate the GNP share of the total shadow economy, reveals great similarities. Naturally these results are not comparable in an absolute sense, for the Schneider-Enste approach ultimately covers a much broader area, although VAT evasion almost

certainly comprises a considerable part of it. However, if the selected European countries are ranked in ascending sequence according to the rates determined by both methods, i.e. the country with the highest rate is assigned the lowest number, significant parallels become evident even if 100 percent agreement is not obtained (cf. Table 4). Both approaches show that Italy, Greece and Spain take up the first three positions, followed by Belgium and Portugal, although the sequence is slightly changed around and France is located in the midfield area in both methods. The Ifo approach shows that particularly low evasion rates are found in the Netherlands, preceding Great Britain and Denmark, whereas the Schneider-Enste approach shows Great Britain followed by Germany and the Netherlands. Great Britain at least has a very good showing in both cases.

The comparison of tax evasion rates together with other calculations on the general shadow economy allows the conclusion to be drawn, despite the differences in the survey methods and approaches applied, that the tax evasion rates estimated by the Ifo Institute are relatively well founded.

As the various tax evasion rates not only give rise to national problems but also affect the other EU countries via the calculation of the EU's capital resources, all EU member states would be well advised to initiate a joint initiative against tax evasion in general and VAT evasion in particular.<sup>3</sup> Although relevant impulses have repeatedly come from the European Commission, among others, it would seem that insufficient (international) coop-

<sup>3</sup> Another reason for urgency is that enormous VAT revenues have already been lost for a number of years due to inter-community tax evasion models (especially carousel fraud).

eration continues to dominate the scenario at the expense of joint efforts.

## References

Dziadkowski, D., A. Gebauer, W.C.Lohse, C.W. Nam and R. Parsche (2002), *Entwicklung des Umsatzsteueraufkommens und finanzielle Auswirkungen neuerer Modelle bei der Umsatzbesteuerung*, ifo Forschungsberichte No. 13, München.

Europäische Kommission (2001), *Vorschlag für eine Verordnung des Europäischen Parlamentes und des Rates über die Zusammenarbeit der Verwaltungsbehörden auf dem Gebiet der Mehrwertsteuer, Vorschlag für eine Richtlinie des Europäischen Parlamentes und des Rates zur Änderung der Richtlinie 77/799/EWG des Rates über die gegenseitige Amtshilfe zwischen den zuständigen Behörden der Mitgliedstaaten im Bereich der direkten und indirekten Steuern (von der Kommission vorgelegt)*, KOM(294) endgültig, Brüssel.

Federal Ministry of Finance (2002), *Fachblick Finanz- & Wirtschaftspolitik: Die wichtigsten Steuern im internationalen Vergleich*, Berlin.

Nam, C.W., R. Parsche and B. Schaden (2001), "Measurement of Value Added Tax Evasion in Selected EU Countries on the Basis of National Accounts Data", *ifo Studien* 2, 127-144.

Schneider, F. and D.H. Enste (2000), "Shadow Economies: Size, Causes and Consequences", *Journal of Economic Literature*, 77-114.

Spanakakis, G. and S. Martelli (1981), "Steuerhinterziehung als Form des Steuerwiderstands", *ifo Schnelldienst* 16/17, 95-104.

# TAXES AS A DETERMINANT FOR FOREIGN DIRECT INVESTMENT IN EUROPE

ANDREAS HAUFLER\* AND  
SVEN STÖWHASE\*\*

## Introduction

Not even ten years ago, James Markusen's well-known survey on the motives for multinational firms to invest abroad concluded that "(t)here is little support for the idea that risk diversification or tax avoidance are important motives for direct foreign investment" (Markusen 1995, p. 171). Meanwhile, the evaluation of the importance of taxes as a determinant for foreign direct investment (FDI) has changed markedly. Following extensive theoretical research on tax competition for internationally mobile capital<sup>1</sup> a substantial body of empirical work has appeared in recent years which almost unanimously concludes that high taxes have a significantly negative effect on the likelihood of a country to attract FDI. Many of the empirical contributions have explored the determinants of US outward and inward foreign direct investment (see Hines 1999 for an overview), but recently there have also been several studies that analyze the location decisions of EU-based multinationals within Europe (De Mooij and Ederveen 2001).

The increasing policy interest in the link between taxes and FDI results from high unemployment in Europe, which governments hope to alleviate by attracting sufficiently large FDI inflows. Moreover, it is widely believed that FDI inflows into a country have positive productivity spillovers on domestic firms, and this proposition is generally supported by the existing econometric evidence (Görg and Strobl 2001). Taken together these presumably positive effects of FDI are able to explain the increasing willingness of potential host countries to grant tax breaks or outright subsidies to multinational firms that open up a new plant in their juris-

diction. At the same time, however, there is increasing concern both among academics and policymakers that multinational firms avoid taxes unduly through strategic tax planning and profit shifting to low-tax countries.<sup>2</sup>

In this research report we argue that the complex links between FDI and the tax systems of alternative host countries require a disaggregated empirical analysis that carefully distinguishes between different sectors in which FDI takes place, and between different motives for undertaking the investment. The results that have so far been obtained in the research project<sup>3</sup> indicate that investments undertaken in different sectors of the economy respond with very different elasticities to tax incentives (Stöwhase 2003). Moreover, an FDI activity undertaken for the purpose of production responds to a broad range of tax incentives whereas an FDI activity whose primary purpose is to supply internal services to the multinational enterprise (MNE) responds primarily to the statutory tax rate (Stöwhase 2002). This last finding is consistent with international profit shifting and it also demonstrates the need to distinguish between different measures of the tax burden in a given host country.

## Alternative tax rate measures

The natural starting point for a discussion of measures of corporate taxation is the statutory tax rate on corporate profits, summed over different levels of government in a given country. A major advantage of statutory tax rates is that data are readily available, both over time and across countries. However, statutory tax rates include neither different depreciation allowances nor any other specifics of the national tax codes and are therefore only a very incomplete measure of the tax incentives faced by multinational firms.<sup>4</sup>

More encompassing tax measures are so-called effective tax rates. Broadly speaking, effective tax rates take into account the differences between the theoretical concept of pure economic profits and

\* Andreas Haufler is Professor for Economic Policy, University of Munich.

\*\* Sven Stöwhase is researcher at the Department of Economics, University of Munich.

<sup>1</sup> For recent overviews, see Wilson (1999) and Haufler (2001).

<sup>2</sup> See Hines (1999) for empirical evidence on profit shifting of US multinationals.

<sup>3</sup> The research is part of a project on "Fiscal federalism", which aims to devise fiscal rules for the EU taking account of both welfare-theoretic and political-economic arguments. The project is carried out jointly with Heinrich Ursprung (University of Konstanz) and is financed by the German Research Foundation (DFG).

<sup>4</sup> However, differences in statutory tax rates may be crucial when FDI is primarily driven by incentives for strategic profit shifting. This will be further discussed below.

**Table 1**  
**Country ranking by tax rate**

	Backward-looking		Forward-looking			Statutory (2001 tax rate in parentheses)	Minimum of [1] – [4] (%)	Maximum of [1] – [4] (%)
	Average tax rates							
	[1] Macro <sup>a)</sup> (1991–97)	[2] Micro <sup>b)</sup> (1998)	[3] EATR <sup>c)</sup> (2001)	[4] ETA <sup>d)</sup> (2001)	EMTR <sup>c)</sup> (2001)			
Austria	2	1	3	3	3	3 (34 %)	10.3 (micro)	27.9 (ETA)
Belgium	7	2	9	7	7	8 (40.2 %)	20.6 (micro)	34.5 (ETA)
France	5	7	5	8	5	6 (36.4 %)	23.6 (macro)	34.7 (ETA)
Germany	3	8	8	9	8	7 (38.3 %)	19.9 (macro)	34.9 (ETA)
Ireland	1	3	1	1	1	1 (28/10 <sup>c)</sup> %)	8.0 (EATR)	23.5 (micro)
Italy	8	9	4	2	2	9 (40.3 %)	27.6 (ETA)	43.9 (micro)
Netherlands	6	6	6	5	6	4 (35 %)	24.7 (macro)	31.0 (ETA)
Spain	4	4	7	5	9	4 (35 %)	20.6 (macro)	32.5 (EATR)
UK	9	5	2	3	4	2 (30 %)	25.7 (EATR)	38.4 (macro)

\* Split tax rate  
<sup>a)</sup> = Macroeconomic tax rates based on a modified version of Mendoza et al. (1994) methodology. Source: OECD (2000, p. 31). – <sup>b)</sup> = Microeconomic tax rates based on firm level data. Source: CPB – Netherlands’ Bureau for Economic Policy Analysis, The Hague. – <sup>c)</sup> = Effective average and effective marginal tax rates – base case. Source: Institute for Fiscal Studies, London. – <sup>d)</sup> = Effective average tax rates computed by the European Tax Analyzer. Source: Commission of the European Communities (2001, p. 202).

the taxable income on which firms are actually charged under the tax code of a given country. In the presence of special tax breaks, accelerated depreciation schemes and similar tax incentives, taxable profits may be substantially lower than pure economic profits, leading to diverging measures for statutory tax rates on the one hand and effective tax rates on the other.

Effective tax rates can be divided into two categories, backward and forward looking tax measures. Backward looking tax measures use historical information about past profits and paid taxes to compute effective tax rates. Mendoza et al. (1994) divide total tax revenue from corporate income by the reported surplus of the economy in any given year to estimate a macroeconomic effective average tax rate, which is also referred to as an implicit tax rate. Analogously, it is possible to derive microeconomic tax rates for individual firms using actual tax payments and accounting data. These firm-level data can then be aggregated to obtain microeconomic effective average tax rates for one or several industries.

Forward-looking measures of effective tax burdens consider expected tax payments associated with particular decisions made by the firm. King and Fullerton (1984) were the first who computed effective marginal tax rates (EMTR) with an approach based on neo-classical investment theory. Given the tax code of a country and the interest rate, they calculate the pre-tax rate of return of a

(hypothetical) marginal investment project that is required to earn an after-tax return equal to the interest rate. The EMTR is then defined as the difference between the required pre-tax rate of return and the interest rate (the so-called “tax wedge”), divided by the pre-tax rate of return.

By construction, the EMTR is especially relevant when analysing the effects of taxes on incremental investment decisions, for example plant expansions. It fails, however, to capture the effects of intra-marginal investments like the location decision of a multinational corporation. Devereux and Griffith (1998a, 1998b) have therefore extended the King-Fullerton methodology to account for discrete investment choices. This results in effective average tax rates (EATR), which can be roughly described as a weighted average of the EMTR on the one hand and the statutory tax rate on the other. A final, and methodologically different, instrument to calculate forward-looking tax measures is the European Tax Analyzer (ETA; see Jacobs and Spengel 1999). The ETA computes the tax burden of a model firm by simultaneously simulating all decisions of the firm, including production and financial planning, and is therefore somewhat closer to industrial management.

Table 1 shows the ranking of nine EU countries under different measures of corporate taxation.<sup>5</sup>

<sup>5</sup> The development of (different measures of) corporate taxation in the period 1982-2001 is summarized and discussed in Devereux, Griffith and Klemm (2002).



Rank one is given to the country with the lowest tax rate in the sample while rank nine labels the country with the highest tax rate. As can be seen, tax rates and the ranking of countries differ markedly with the underlying tax measure. One obvious case is Germany where the average tax rate based on the backward-looking macroeconomic approach is about 20 per cent, whereas the effective average tax burden calculated from the European Tax Analyzer is 15 percentage points higher (34.9 percent). These differences are the basis for the controversial discussion of whether Germany is a high-tax country for corporations, or not.<sup>6</sup> The reverse pattern can be found in the United Kingdom, where the tax rate on a hypothetical investment project is rather low when compared to other countries, but the macroeconomic effective average tax rate is the highest in our sample. There are a few countries which are ranked consistently under each of the different tax measures, such as Ireland and Austria (as low-tax countries), or the Netherlands (as an intermediate-tax country). However, for most countries in the sample the evaluation of its tax burden, relative to its neighbours, depends critically on the precise tax measure used.

### **Taxes and FDI: The need for disaggregation**

There are by now a great number of studies exploring the determinants of US outward and inward foreign direct investment (see Hines 1999). In contrast, there are still only a few analyses which focus on the location decision of EU-based firms inside Europe. Three examples of the latter are Bénassy-Quéré et al. (2000) and Büttner (2002), who use foreign direct investment flows as dependent variable, and Gorter and Parikh (2001), who measure the impact of taxes on the stock of foreign direct investment. Although the econometric models are specified differently, all these studies find a significantly negative correlation between tax rates and foreign direct investment on the basis of bilateral country-to-country data. Hence, the studies focusing on the distribution of FDI inside Europe generally confirm the result of earlier US studies that high taxes tend to deter foreign investment.

Beyond this general result, however, few conclusions are possible at this point. A severe constraint

for empirical work on FDI in Europe is data availability. Almost all existing studies on FDI in Europe rely on aggregated data, which are collected at the national level by the OECD and EUROSTAT. Since the underlying national statistics are generally not harmonized, this raises the problem of data comparability. Moreover, FDI is a very heterogeneous measure and using aggregate data for the relationship between taxes and FDI cannot answer the question whether some types of FDI, or some sectors in which FDI takes place, are more sensitive to tax differences than others.

For the United States, where data is often available at the firm level, there are several studies documenting the importance of a disaggregated approach. In an early study, Papke (1991) analyses the relation between state tax rates and new firm births in five distinct industries of the US manufacturing sector. While a negative correlation between taxes and new firm births is confirmed, on average, in his pooled sample, the five industries under consideration differ markedly in their response to tax rates, indicating a strong variance in the mobility of capital between the different industries. More recently, Swenson (2001) finds that although tax rates are generally negatively related to FDI, the tax-sensitivity depends crucially on the type of FDI. Analysing FDI into the United States, her results indicate that new plants and plant expansions appear to be deterred by high state taxes, while mergers and acquisitions are instead positively correlated with tax rates.

This more complex, but also more insightful, relationship between an appropriate tax measure and sector or transaction-specific FDI is the starting point for the empirical research project on which we report here. Stöwhase (2003) follows the disaggregated approach using sector specific data about outward foreign direct investment flows from Germany, the UK and the Netherlands into eight European countries for the years 1995 to 1999. This data set is constructed from EUROSTAT figures. EUROSTAT has been able to extend and improve the coverage of FDI flows throughout the last two years and can now provide more detailed data in some areas. However, the sample size is rather small so that results should be interpreted with due caution. The basic approach of this study is to separately estimate tax-elasticities for the primary, secondary and tertiary sector based on the assumption that differences in location factors determine

<sup>6</sup> See the debate between Hettich and Schmidt (2001, 2003) and Gutekunst, Hermann and Lammersen (2003).

the decision of an MNE where to invest (see Dunning 1977; 1981). Thereby, the study controls for differences in market size and factor costs between host countries, and it also takes into account pairwise fixed effects between the source and the target country of the investment.<sup>7</sup> The study uses backward-looking microeconomic effective tax rates. The advantage of backward-looking tax measures is that these rates have been empirically observed, rather than theoretically derived. Additionally, focusing only on the tax payments of local firms overcomes the problem that backward-looking tax measures may be biased by cross-border profit shifting of MNEs.

The results of this study can be summarized as follows: (i) FDI in the primary sector (consisting of agriculture, fishing, mining and quarrying) has a tax elasticity of around zero, implying that FDI is not driven by tax incentives. (ii) Investment in the secondary sector (manufacturing) is negatively and significantly affected by an increase in effective taxation. The tax elasticity is around  $-2$ , implying that a one percent increase in the tax rate of the host country decreases FDI by roughly two percent. (iii) Compared to the secondary sector, FDI in the tertiary sector (consisting of investment in service industries such as transport, communication and financial intermediation) is even more strongly affected by an increase in tax rates and the tax elasticity for this sector is around  $-3$ .

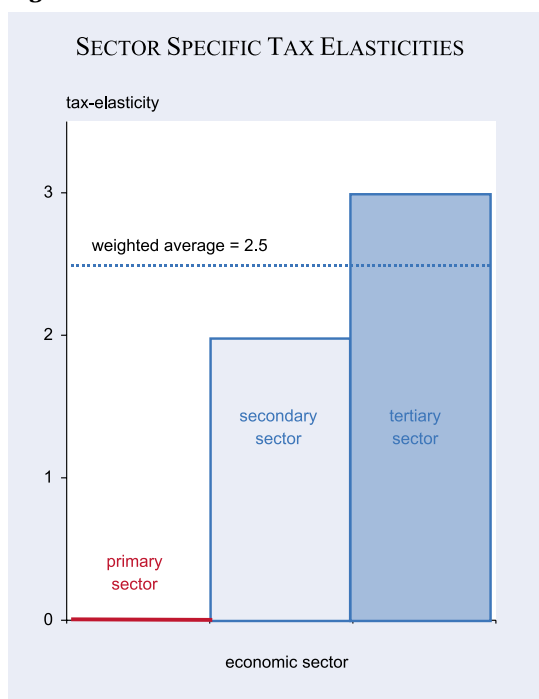
By weighing sector-specific elasticities with the sector's share of total FDI, we obtain an average tax-elasticity of  $-2.5$ . This average tax elasticity is comparable to the results derived in more aggregated studies.<sup>8</sup> The results of the analysis are graphically summarized in Figure 1.

What are the policy implications of obtaining separate tax elasticities for the three sectors? When setting their tax rates, governments have to take into account the effects of FDI on the local economy. The spillovers most often mentioned are increased demand for labour in the presence of involuntary unemployment, and increases in productivity that affect long-term economic growth. Empirically, the existence of positive spillovers is

<sup>7</sup> Pairwise fixed effects capture the specific relation between two countries and include so called "weak" factors, such as culture and language, which are hard to measure empirically.

<sup>8</sup> De Mooij and Ederveen (2001) make the outcomes of several empirical studies comparable and compute a mean tax-elasticity around  $-3.3$ .

Figure 1



well documented (see Görg and Strobl 2001). Even though empirical work on the possible transmission channels for these spillovers has only just begun<sup>9</sup>, most observers argue that investments in the primary sector have fewer positive spillovers onto the rest of the economy than FDI in the other sectors, and that technological spillovers are particularly high in the service sector. Using an undifferentiated elasticity as the basis for tax planning may therefore underestimate the gains from attracting FDI, given the above-average tax elasticity of the sectors which are likely to produce most positive spillovers.<sup>10</sup>

### Disaggregated FDI and its sensitivity to tax burden measures

As pointed out above, the question of whether a given host country is an attractive location for FDI with respect to its corporate tax system will generally depend on the precise measure of the capital tax burden used. We have also seen that even if a unique tax measure is used, the response of FDI to tax rate

<sup>9</sup> Görg and Strobl (2002), for example, find empirical evidence that positive spillovers from FDI to the local economy are transmitted through worker mobility.

<sup>10</sup> This can be important in studies that quantitatively compare the tax concessions or subsidy payments granted to multinationals to the benefits for the host country in terms of additional employment or productivity spillovers. Haskel, Pereira and Slaughter (2002) make a first attempt in this direction and find that the British government has "oversubsidized" FDI in some recent high-profile cases.

differentials may differ across economic sectors. Taken together, these two results raise the further question of whether different types of FDI respond in different ways to alternative tax measures.

We have pursued this issue in a separate study (Stöwhase 2002), which divides FDI into two categories, labelled “production” and “services”. This study employs the database “Globalisation” collected by the Rheinisch-Westfälische Institut für Economic Research (RWI, see Döhrn 2001). Our dataset covers foreign activities of German multinationals in eight European countries<sup>11</sup> for the years 1991 to 1998 leaving us with a rather small sample size. The advantage of this database is that it is possible to distinguish between the economic functions of the activity so that we can divide FDI into investment intended to produce final or intermediate goods and investment intended to provide the German parent with overhead services (such as financial intermediation, or research and development). An effective tax rate based on microeconomic data and the statutory tax rate are taken as tax parameters. Again, we run separate regressions for the two categories of FDI.

The basic results of the two regressions are presented in Table 2. The coefficient of the effective tax rate shows a negative sign for FDI in production, but it is not significantly different from zero for investment that falls into the service category. This implies that an increase in the effective average tax rate decreases FDI in production facilities but it does not affect FDI undertaken to provide internal services to the MNE. Interestingly, we observe precisely the opposite results for the statutory tax rate. Here, FDI in production facilities seems to be independent of the statutory tax rate, whereas investment in the service category is deterred by a higher statutory tax rate.

<sup>11</sup> These countries are: Austria, Belgium, France, Ireland, Italy, the Netherlands, Spain and the United Kingdom.

**Table 2**

**Regression coefficients**

	Production	Service
Effective tax rate	negative	-
Statutory tax rate	-	negative
Market Size	positive	-

We can conclude from these findings that the two types of FDI are sensitive to different measures of the corporate tax burden. Investment undertaken for production purposes reacts to the broader measure of effective average tax rates rather than to the narrow measure of the statutory tax rate. This is consistent with our discussion above. It is somewhat more difficult to explain why FDI in the service category responds to changes in the statutory tax rate, but not to changes in the effective tax rate. Profit shifting is a possible explanation for this observation. According to Devereux (1992), there are two types of capital tax competition, competition for physical capital and competition for (paper) profits. This allows multinational firms to follow a two-step optimization strategy. In the first step, the multinational firm deploys (most) physical capital and hence production activities in the countries offering locational advantages, including a good public infrastructure. In a second step, the MNE can shift some of its taxable profits into a country that offers a low statutory tax rate and with which it maintains a nexus (though with perhaps only a minimal capital base).<sup>12</sup> Since no or little physical production takes place in the country to which profits are shifted, the decision involved in this type of tax arbitrage depends only (or at least primarily) on a comparison of the statutory tax rates. In this setting the MNE can thus have “the best of both worlds”, benefiting from location advantages in the country of production while transferring the economic rent of the investment to a tax haven where its profits are only lightly taxed.<sup>13</sup> If this interpretation is relevant for the FDI undertaken by German multinationals during the last decade, then our empirical analysis suggests that profit shifting has been an important motive behind the choice of host countries for service-related FDI.

Clearly, these results have to be interpreted with care, especially because the analysis is based on a relatively small sample of FDI activities, and

<sup>12</sup> The traditional instrument to shift profits from one country to another are transfer prices for intermediate goods traded between the subsidiary and its parent. However, transfer pricing strategies are limited by the arms-length principle which stipulates that internal trade prices have to be set such that they resemble common market prices. Moreover, using transfer pricing strategies requires that some production is carried out in both countries in which the multinational firm operates. For these reasons, profit shifting seems to have increasingly shifted to internal trade in services, including payments for overhead services, royalties and interest paid on intra-firm loans. See Mintz (2001) for a detailed discussion.

<sup>13</sup> See Haufler and Schjelderup (1999) for a theoretical analysis of this scenario.

because there may be other structural differences between the two categories that we cannot account for with our set of control variables. However, the basic result that service-related FDI reacts much more strongly to changes in the statutory tax rate than to changes in the effective average tax rate has so far proven to be robust with respect to changes in the precise specification of the empirical model. Moreover, the results for non-tax variables, in particular market size, also tend to confirm that traditional location advantages are important only for FDI of the production type, but do not matter for FDI that falls in the service category (see Table 2). This adds additional support to the presumption that some types of FDI are rather independent of the real variables of the host economy, and locational choices are made primarily in order to minimize the worldwide tax burden of the multinational firm.

## Conclusions

A large number of recent empirical studies have confirmed that high taxes in a potential host country tend to deter FDI, and some first “consensus estimates” for the elasticity with which aggregate FDI responds to tax incentives have been derived. In this report we have argued that future empirical work has to go one step further and try to understand the complex interrelationships that exist between individual elements of potential host countries’ tax systems and sector- or activity-specific FDI flows. We have reported on two sets of findings showing that (i) investments in different sectors respond with rather different elasticities to tax incentives and (ii) FDI undertaken for different purposes will respond in qualitatively different ways to specific tax incentives, such as a low statutory tax rate or generous depreciation allowances. We believe that further empirical work at a disaggregated level is needed in order to help governments devise tax policies that do not deter foreign direct investment while at the same time ensuring that host countries get a fair share of the location rents that multinational firms can earn in the integrated European market. The most important precondition for further research are improvements in data availability, including more detailed data on FDI stocks and flows, but also more adequate data on other location factors, such as public infrastructure or labour costs.

## References

- Bénassy-Quéré, A., L. Fontagné and A. Lahrière-Révil (2000), “Tax Competition and Foreign Direct Investment”, *CEPII Working Paper*, no. 2000-06, Paris.
- Büttner, T. (2002), “The Impact of Taxes and Public Spending on FDI: An Empirical Analysis of FDI Flows Within Europe”, *ZEW Discussion Paper*, no. 01-17, Mannheim.
- Commission of the European Communities (2001), *Company Taxation in the Internal Market*, COM, 582 final, Brussels.
- De Mooij, R.A. and S. Ederveen (2001), “Taxation and Foreign Direct Investment: A Synthesis of Empirical Research”, *CESifo Working Paper*, no. 588.
- Devereux, M.P. (1992), “The Ruding Committee Report: An Economic Assessment”, *Fiscal Studies* 13 (2), 96-107.
- Devereux, M.P. and R. Griffith (1998a), “The Taxation of Discrete Investment Choices”, *IFS Working Papers* 16, London.
- Devereux, M.P. and R. Griffith (1998b), “Taxes and the Location of Production: Evidence from a Panel of US Multinationals”, *Journal of Public Economics* 68 (3), 335-67.
- Devereux, M.P., R. Griffith and A. Klemm (2002), “Corporate Income Tax Reforms and International Tax Competition”, *Economic Policy* 35, 451-95.
- Döhrn, R. (2001), “The RWI Data Base on the Globalisation of German Companies”, *Schmollers Jahrbuch* 121, 427-34.
- Dunning, J.H. (1977), “Trade, Location of Economic Activity and MNE: A Search for an Eclectic Approach”, in: B. Ohlin, P. Hesselborn and P. Wijkman (eds), *The International Allocation of Economic Activity*, London: Macmillan.
- Dunning, J.H. (1981), *International Production and the Multinational Enterprise*, London: Allen and Unwin.
- Görg, H. and E. Strobl (2001), “Multinational Companies and Productivity Spillovers: A Meta-analysis”, *Economic Journal* 111, F 723-39.
- Görg, H. and E. Strobl (2002), “Spillovers from Foreign Firms through Worker Mobility: An Empirical Investigation”, *IZA Discussion Paper* 591, Bonn.
- Gorter, J. and A. Parik (2001), “A Quantitative Study on the Relationship Between Foreign Direct Investment (FDI) and Effective Tax Rates in the European Union”, *CPB Working Paper*, The Hague.
- Gutekunst, G., R. A. Hermann and L. Lammersen (2003), “Deutschland ist kein Niedrigsteuerland – eine Replik auf den Beitrag von Hettich und Schmidt und Beitrag zur (Er-)Klärung der Methoden zur Messung der Unternehmensteuerbelastung”, *Perspektiven der Wirtschaftspolitik* 4(1), 123-36.
- Haskel, J., S. Pereira and M. Slaughter (2002), “Does Inward Foreign Direct Investment Boost the Productivity of Domestic Firms?”, *NBER Working Paper 8724*, Cambridge (Mass.).
- Haufler, A. (2001), *Taxation in a Global Economy*, Cambridge (UK).
- Haufler, A. and G. Schjelderup (1999), “Corporate Taxation, Profit Shifting, and the Efficiency of Public Input Provision”, *Finanzarchiv* 56(3/4), 481-99.
- Hettich, F. and C. Schmidt (2001), “Die deutsche Steuerbelastung im internationalen Vergleich: Warum Deutschland (keine) Steuerreform braucht”, *Perspektiven der Wirtschaftspolitik* 2(1), 45-60.
- Hettich, F. and C. Schmidt (2003), “Erwiderung zur Replik von Gutekunst et al. ‘Deutschland ist kein Niedrigsteuerland’”, *Perspektiven der Wirtschaftspolitik* 4(1), 137-40.
- Hines, J.R. (1999), “Lessons from Behavioural Responses to International Taxation”, *National Tax Journal* 52, 305-22.
- Jacobs, O.H. and C. Spengel (1999), “The Effective Average Tax Burden in the European Union and the USA: A Computer-Based Calculation and Comparison with the Model of the European Tax Analyser”, *ZEW Discussion Paper*, no. 99-54.
- King, M.A. and D. Fullerton (1984), *The Taxation of Income from Capital*, Chicago.

Markusen, J.R. (1995), "The Boundaries of Multinational Enterprises and the Theory of International Trade", *Journal of Economic Perspectives* 9, 169–89.

Mendoza, E.G., A. Razin and L.L. Tesar (1994), "Effective Tax Rates in Macroeconomics: Cross-country Estimates of Tax Rates on Factor Incomes and Consumption", *Journal of Monetary Economics* 34, 297–323.

Mintz, J. (2001), "Taxation of Investment and Finance in an International Setting: Implications for Tax Competition", *CoFE Discussion Paper* 00-33, Constance.

OECD (2000), "Average Effective Tax Rates on Capital, Labour and Consumption", *Economics Department Working Paper* 258, Paris.

Papke, L.E. (1991), "Interstate Business Tax Differentials and New Firm Location: Evidence from Panel Data", *Journal of Public Economics* 45, 47–68.

Stöwhase, S. (2002), "Profit Shifting Opportunities, Multinationals, and the Determinants of FDI", *Münchener Wirtschaftswissenschaftliche Beiträge* 02–11, Munich.

Stöwhase, S. (2003), "Tax Rate Differentials and Sector Specific Foreign Direct Investment: Empirical Evidence from the EU", *mimeo*.

Swenson, D.L. (2001), "Transaction Type and the Effect of Taxes on the Distribution of Foreign Direct Investment in the United States", in: Hines, J. R. (ed), *International Taxation and Multinational Activity*, Chicago.

Wilson, J.D. (1999), "Theories of Tax Competition", *National Tax Journal* 52, 269–304.

# EFFECTS OF TAX DEPRECIATION RULES ON FIRMS' INVESTMENT DECISIONS: A COMPARISON OF EUROPEAN TRANSITION COUNTRIES

CHANG WOON NAM AND  
DOINA MARIA RADULESCU\*

## Introduction

Promoting investment is of particular importance in the European transition economies since investments act as growth engines. In this context, the corporate tax regimes adopted in these countries play a crucial role for stimulating private investment. Accordingly, tax systems must be designed to attract capital. Apart from the tax rates, due attention has to be paid to depreciation, since it is one of the important factors affecting firms' investment decisions, as it is deducted from a gross stream of return generated from the asset when calculating tax profits. Along with straight-line depreciation (applied in Hungary and Bulgaria), geometric-degressive depreciation which may be employed in Poland and the Czech Republic, and accelerated depreciation all aim to encourage firms' investment activities (King 1977; King and Fullerton 1984; Sinn 1987; Jacobs and Spengel 1996; Alvarez, Kannianen and Södersten 1999). In assessing their relative generosity, a useful benchmark is that of Samuelson's true economic depreciation (TED), which is neutral with respect to investment decisions (Samuelson 1964; Atkinson and Stiglitz 1980).

The incentive effects of different tax depreciation rules combined with the corporate tax rate on firms' investment decisions can be compared on the basis of the net present value model (Devereux, Griffith and Klemm 2002). Without taxation, the net present value (NPV) is equal to the present value of future gross return, discounted at an appropriate interest rate less investment cost. An investment project is therefore considered to be profitable when the NPV is positive. After

the introduction of tax on corporate income, the present value of the asset generated from an investment amounts to the sum of present value of net return (gross return less taxes) and tax savings led by an incentive depreciation provision. If the investment is self-financed, the interest rate directly corresponds to the investor's opportunity cost. Under the assumption of a perfect competitive market structure, there is only one interest rate in the financial market.

In addition, anticipated effects of inflation on firms' investment decisions are examined in the context of corporate income taxation. The central issue is that the so-called historical cost accounting method, which is applied in practice when calculating the (corporate or income) tax base, causes fictitious profits in inflationary phases that are also subject to tax. This type of increased tax burden is generally called inflation losses (Aaron 1976; Kay 1977; Feldstein 1979; Kopcke 1981; Streißler 1982; Gonedes 1984). Therefore, in periods with inflation generous tax depreciation provisions do not adequately promote private investment as designed, but only (or partly) compensate the losses caused by inflation.

The aspect of inflation linked with different depreciation rules is of particular importance in transition countries, where economies have continuously been confronted with rising prices during the last decade. The past inflation rate in the Czech Republic ranged between 52 percent in 1991 and 4.9 percent in 2001 compared to that of Poland between 70.3 percent in 1991 and 5.6 percent in 2001, while some years even recorded triple digit inflation in Bulgaria and Romania. For example, the annual change in the consumer price level varied between 333.5 percent in 1991 and 8.0 percent in 2001 in Bulgaria (EBRD 2002). Additionally, the different tax depreciation rules applied in these countries can have different incentive effects.

This study aims at examining the corporate tax incentive schemes currently in effect to stimulate private investment in Bulgaria, the Czech Republic, Hungary, Macedonia, Poland, Romania and Slovenia.

## A Brief Note on the Empirical Method for Measuring Incentive Effects of Various Tax Depreciation Rules

In European transition economies, straight-line, geometric-degressive and accelerated depreciation

\* Chang Woon Nam and Doina Maria Radulescu are researchers at the Ifo Institute, Munich.

measures are quite popular in combination with different corporate tax rates.<sup>1</sup> Their generosity can be determined on the basis of the so-called Samuelson's TED. Under the assumption that

- a self-financed investment generates an infinite stream of future gross return,
- this return exponentially declines at a given rate and
- all prices are constant over time.

Samuelson (1964) showed in his fundamental theorem of tax-rate invariance that corporate income taxation does not affect firms' investment decisions at all, when TED – the negative change in value of the asset in the course of time – is deducted from an expected gross stream of return when calculating tax profits. And the TED rate is the same as the rate with which the gross return declines in the course of time. For instance, the

application of geometric-degressive depreciation is advantageous when its rate is larger than the TED rate.

The size of fictitious profits and the additional corporate tax burden, which are caused by the application of the historical cost accounting method in the inflationary phase, can also be measured on the basis of the net present value model.<sup>2</sup> Such inflation losses lead to the reduction of nominal net present value (discounted at the nominal interest rate). More precisely, the amount of increased tax burden caused by inflation can be described as the difference between the two nominal present values, one with tax depreciation measured on the basis of current (replacement) value of a capital good and the other determined on the basis of the historical cost accounting method.

<sup>1</sup> Accelerated depreciation is used in practice as an investment promotion scheme in combination with the straight-line depreciation method. Accelerated depreciation expense (as a certain percentage share of investment cost) is tax-deductible in the first year of the tax-life of a capital good. Correspondingly, the total tax-life of a capital good is reduced.

<sup>2</sup> There have been a number of attempts to estimate the current value of a capital good on the basis of indexation. "Such a method would provide for equitable accounting whether inflation rates were high or low. [But] many agree that it would be too complicated to compute the rate of inflation for the multitude of different assets. The idea of using an overall index was rejected on the grounds that some assets such as computers actually [decline] in price over time and this method would bias investment towards those assets that increased in price" (Evans 1983, p. 150).

**Table 1**  
International comparison of tax incentives measured in terms of net present value: investment in equipment with the normal tax-life of 10 years, 2001

Country	Statutory corporate tax rate for retained earnings (%)	Tax depreciation rules	Nominal net present value			
			Without inflation	2% inflation	4% inflation	6% inflation
Poland	28 <sup>a)</sup>	Geometric-degressive depreciation (20%) <sup>b)</sup>	0.0	2.1	4.8	8.0
Czech Republic	31	Geometric-degressive depreciation in 12 years *	-20.1	-19.7	-18.1	-16.3
Macedonia	15	Geometric-degressive depreciation (30%)	3.9	5.4	7.1	5.4
Hungary	18	Straight-line depreciation (14.5%) <sup>c)</sup>	3.1	4.6	6.3	8.3
Slovenia	25	Straight-line depreciation in 3 years	14.0	17.5	21.2	25.1
Romania	25	Accelerated depreciation (50%) + straight-line depreciation in 10 years <sup>d)</sup>	14.3	17.8	21.7	25.7
Bulgaria	20	Straight-line depreciation in 5 years <sup>e)</sup>	7.3	9.5	11.8	14.4

Common assumptions: Equity finance; Investment cost = 333.3; Gross return infinitely generated from the asset at the year of investment = 100; Real interest rate = 10%; TED rate = 20%

\* The depreciation rate amounts to 8.33% for the first year and 15.28%, 13.89%, 12.5%, 11.11%, 9.72%, 8.33%, 6.94%, 5.56%, 4.17%, 2.78% and 1.39% for the consequent years, respectively.

<sup>a)</sup> The rate will be reduced to 24% in 2003 and 22% for 2004 and future years. – <sup>b)</sup> In general the straight-line method is applied, in certain cases the declining-balance method may be allowed, too. For certain types of assets (such as machinery that may become obsolete because of technological developments), depreciation rates may be doubled. –

<sup>c)</sup> For automation equipment, computers, equipment for environmental protection, medical equipment the rate of 33% applies. – <sup>d)</sup> Assets may be depreciated using the straight-line method. Useful life for machinery – 4 to 10 years. If the cumulative inflation rate for the preceding 3 years exceeded 100%, assets may be re-valued annually. Companies may use accelerated depreciation if they meet certain criteria subject to the approval of the Ministry of Finance. – <sup>e)</sup> For some assets which are acquired on or after 1.01.1998 accelerated depreciation at a rate of up to 30% is allowed.

Sources: IBFD (1999), Central & East European Tax Directory; Ernst & Young: Worldwide Corporate Tax Guide: [http://www.ey.com/global/gcr.nsf/EYPassport/Welcome-Worldwide\\_Corporate\\_Tax\\_Guide-EYPassport](http://www.ey.com/global/gcr.nsf/EYPassport/Welcome-Worldwide_Corporate_Tax_Guide-EYPassport); Calculations of the Ifo Institute for Economic Research.

**International Comparison of Effects of the Tax Incentive System on Equipment Investment**

Table 1 compares the highest corporate tax rate (for retained earnings), tax depreciation methods and the extent of their generosity, as are presently allowed in the context of tax law in seven selected Central and Eastern European countries. In the ranking of the statutory corporate tax rate, the Czech Republic ranks first at 31 percent, followed by Poland (28 percent) and Romania and Slovenia (25 percent). The corporate tax rate is the lowest in Macedonia (15 percent). In Hungary and Slovenia only the straight-line depreciation method can be adopted for equipment. In countries like Poland, the Czech Republic and Macedonia geometric-degressive depreciation is usually applied as the investment incentive scheme for equipment, of which, however, the rate ranges from 20 percent (Poland) to 30 percent (Macedonia).<sup>3</sup> Furthermore, accelerated depreciation can be combined with straight-line depreciation in Romania and even for certain assets acquired after 1998 in Bulgaria. The normal tax-life for equipment amounts to 10 years in the selected countries (except for the Czech Republic where computations are based on a 12-year tax life).

According to the net present value calculated under the standard assumptions for the case of investing in equipment, the Romanian tax incentives, which can be adopted for the specific investments, guarantee the most favourable conditions for the investors in the case of ignoring the impact of anticipated inflation (see Table 1). In a descending order, Slovenia, Bulgaria, Macedonia and Hungary also provide investment incentives. On the other hand, the Polish corporate tax sys-

<sup>3</sup> In the Czech Republic there is a special depreciation scheme over 12 years. Following the tax law, the geometric-degressive depreciation rates applied start with 8.33 percent for the first year, and first rise and then decline during the subsequent years (Table 1).

**Table 2**  
International comparison of investment promotion effect of tax depreciation rules in inflationary phases measured in terms of nominal net present value

Inflation rate %	Poland	Macedonia	Hungary	Slovenia	Romania	Bulgaria
	Tax incentives = Nominal tax savings - Additional tax burden caused by historical account system					
1	-0.3	5.3	4.0	13.1	14.9	8.6
2	-2.0	4.0	2.2	11.8	13.5	7.0
3	-3.7	2.7	0.5	10.5	12.1	5.5
4	-5.3	1.5	-1.3	9.2	10.7	4.0
5	-6.8	0.4	-3.0	7.9	9.3	2.5
6	-8.4	-0.8	-4.6	6.6	7.9	1.0
7	-9.9	-1.9	-6.2	5.3	6.6	-0.5
8	-11.3	-3.0	-7.8	4.0	5.2	-1.9
9	-12.8	-4.0	-9.3	2.7	3.8	-3.4
10	-14.2	-5.1	-10.8	1.4	2.4	-4.8
11	-15.6	-6.1	-12.3	0.1	1.1	-6.2
12	-17.0	-7.0	-13.7	-1.2	-0.3	-7.6
13	-18.4	-8.0	-15.1	-2.5	-1.7	-8.9
14	-19.8	-9.0	-16.5	-3.9	-3.1	-10.3
15	-21.1	-9.9	-17.9	-5.2	-4.5	-11.6
16	-22.4	-10.8	-19.2	-6.5	-5.8	-12.9
17	-23.8	-11.7	-20.5	-7.8	-7.2	-14.3
18	-25.1	-12.6	-21.8	-9.2	-8.6	-15.6
19	-26.4	-13.4	-23.1	-10.5	-10.0	-16.9
20	-27.7	-14.3	-24.3	-11.8	-11.4	-18.1
21	-29.0	-15.1	-25.6	-13.2	-12.8	-19.4
22	-30.3	-16.0	-26.8	-14.5	-14.2	-20.7
Common assumptions	Equity finance; Investment cost = 333.3; Gross return infinitely generated from the asset at the year of investment = 100; Real interest rate = 10%; TED rate = 20%; Economic asset life = Normal tax life = 10 years					
Source: Table 1 and calculations of the Ifo Institute for Economic Research.						

tems remains tax-neutral, since the geometric-degressive depreciation rate is set to be the same as the assumed TED rate, and, therefore, NPV reaches zero in this country. In the Czech Republic a negative net present value was computed.

According to the model simulation summarised in Table 2, the current Romanian and Slovenian tax incentive systems no longer stimulate private investment in equipment when, ceteris paribus, the annual inflation rate reaches 12 percent. On the other hand, the Hungarian system appears to be less robust against inflation, since the investment incentives start to become negative already at an inflation rate of 4 percent, whereas incentive effects cannot be expected in Bulgaria when the inflation rate is higher than 6 percent.

**Future Research Suggestions**

Future research appears to be necessary in order to systematically compare the major outcomes of the present value approach with the effective marginal corporate income tax rate measured on the basis of



user-cost of capital approach that is often used in a similar context (Chennells and Griffith 1997; Devereux, Griffith and Klemm 2002). Furthermore, since the investigated countries have different risk profiles which implicitly determine the respective interest rates, it would be interesting to consider the aspect of different interest rates for future research as well. This could deliver better insight into how and to what extent the various tax regimes applied in these transition countries influence firms' investment decisions.

## References

- Aaron, H.J. (1976), "Inflation and the Income Tax: An Introduction", in: Aaron, H. J. (ed), *Inflation and the Income Tax*, Washington DC: The Brookings Institution, 1-31.
- Alvarez, L., V. Kannianen and J. Södersten (1999), *Why is the Corporation Tax Not Neutral?*, Paper presented at the NHH-CESifo Norwegian-German Seminar on Public Economics on Capital Income Taxation, Munich, June 3-5, 1999.
- Atkinson, A.B. and J.E. Stiglitz (1980), *Lectures on Public Economics*, London: McGraw-Hill.
- Chennells, L. and R. Griffith (1997), *Taxing Profits in a Changing World*, London: KKS Printing.
- Devereux, M.P., R. Griffith and A. Klemm (2002), *Can International Tax Competition Explain Corporate Income Tax Reforms*, mimeo.
- EBRD (2002), *Transition Report 2002*, London.
- Ernst & Young: *Worldwide Corporate Tax Guide*: [http://www.ey.com/global/gcr.nsf/EYPassport/Welcom-Worldwide\\_Corporate\\_Tax\\_Guide-EYPassport](http://www.ey.com/global/gcr.nsf/EYPassport/Welcom-Worldwide_Corporate_Tax_Guide-EYPassport).
- Evans, M.K. (1983), *The Truth about Supply-Side Economics*, New York: Basic Books.
- Feldstein, M.S. (1979), "Adjusting Depreciation in an Inflationary Economy: Indexing versus Acceleration", *NBER Working Paper Series* 395.
- Gonedes, N.J. (1984), "Evidence on the Tax Effect of Inflation under Historical Cost Accounting Methods", *Journal of Business* 54 (2), 227-270.
- IBFD (1999), *Central & East European Tax Directory*, Amsterdam: IBFD Publications.
- Jacobs, O.H. and Ch. Spengel (ed. 1996), *Aspekte der Unternehmensbesteuerung in Europa*, Baden-Baden: Nomos Verlag.
- Kay, J.A. (1977), "Inflation Accounting: A Review Article", *Economic Journal* 87 (346), 300-311.
- King, M.A. (1977), *Public Policy and the Corporation*, London: Chapman and Hall.
- King, M.A. and D. Fullerton (1984), *The Taxation of Income from Capital: A Comparative Study of the United States, the United Kingdom, Sweden and West Germany*, Chicago: University of Chicago Press.
- Kopcke, R.W. (1981), "Inflation, Corporate Income Taxation and the Demand for Capital Asset", *Journal of Political Economy* 89 (1), 122-131.
- Samuelson, P.A. (1964), "Tax Deductibility of Economic Depreciation to Ensure Invariant Valuation", *Journal of Political Economy* 72(6), 604-606.
- Sinn, H.-W. (1987), *Capital Income Taxation and Resource Allocation*, Amsterdam: North-Holland.
- Streißler, E. (1982), "Vier Grundfragen der indirekten Investitionsförderung in Österreich", *Wirtschaftspolitische Blätter* 29(2), 80-93.

## WELFARE TO WORK IN THE UNITED KINGDOM

WOLFGANG OCHEL\*

In most OECD countries unemployment of low skilled workers is high. This is due to the form of technical progress, competition by low-wage countries and the traditional social security system. The traditional social security system follows a wage replacement policy. It pushes the reservation wage up and thus destroys part of the employment opportunities that otherwise would have been available. The alternative to the policy of wage replacement is a policy of wage supplement. Benefits are not given on condition of staying away from formal employment but on condition of participating in it but still not earning enough. A number of mainly Anglo-Saxon countries have moved from a wage replacing to a work complementing welfare system. One of those countries is the United Kingdom. Its welfare-to-work programme consists essentially of a “working families’ tax credit” (now: “working tax credit”).

\* Wolfgang Ochel is researcher at the Ifo Institute, Munich.

**Table 1**  
Unemployment rates by education for population 25 to 64 years of age, 2001

	Below upper secondary education		All levels of education	
	Men	Women	Men	Women
Austria <sup>a)</sup>	6,9	5,9	3,2	3,6
Belgium <sup>a)</sup>	7,7	13,5	4,8	7,4
Denmark	4,0	6,2	3,1	4,1
Finland	10,5	12,7	7,2	8,1
France	9,7	14,4	6,2	9,8
Germany	15,6	11,5	7,7	8,1
Greece	4,9	12,3	5,3	12,5
Ireland	5,5	5,1	3,3	2,9
Italy	6,9	14,0	5,8	10,7
Netherlands <sup>a)</sup>	3,0	5,0	2,0	3,4
Norway <sup>a)</sup>	2,3	2,2	2,6	2,0
Portugal	2,7	4,6	2,7	4,3
Spain	7,3	16,1	6,2	13,3
Sweden	5,6	6,4	4,5	3,8
UK	9,4	5,7	4,1	3,4
Australia	8,1	7,0	5,2	5,1
Canada	10,2	10,2	6,2	5,8
US	7,5	8,9	3,7	3,3

<sup>a)</sup> 2000.

Source: OECD, Education at a Glance, OECD Indicators 2002, Paris 2002, p. 118.

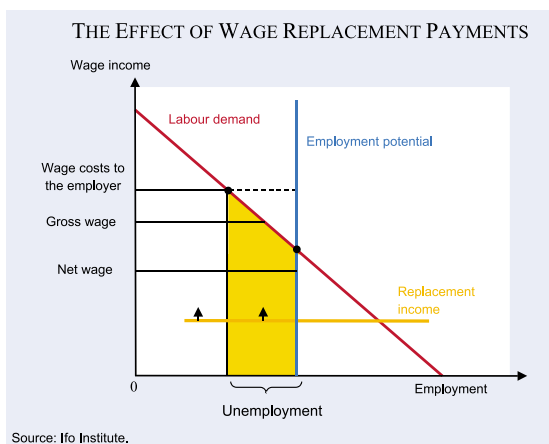
### Unemployment of low skilled workers and replacement policy

Most OECD countries have high rates of unemployment for the less skilled, as a rule considerably exceeding the general unemployment rates. Table 1 shows the unemployment rate for employable persons between ages 25 and 64 with a qualification below upper secondary education. It shows that in 2001, the general unemployment rates exceeded 10 percent only in Greece (women), Italy (women) and Spain (women). For the less skilled such rates prevail in Belgium (women), Finland, France (women), Germany, Greece (women), Italy (women), Spain (women) and Canada. The unweighted average unemployment rate of workers with a “below upper-secondary education” is roughly 50 percent higher than the general unemployment rate of the countries examined in Table 1.

The high unemployment rates of low-skilled workers are due to technical progress, competition by low-wage countries and the traditional social security system. This system grants benefits on the condition of not working. These benefits operate like a wage paid for idleness, which the market wage has to exceed. Since no one is willing to work at a market wage below the social benefit attainable without working, this benefit is a lower bound on market wages. Between the “replacement income” and the net wage, however, there can be a certain gap. In any case, an increase in the entire wage structure is linked with an increase in “replacement income” (Figure 1).

However, in a market economy, an upper bound on an individual’s market wage is given by his (or her) productivity, i.e. the value added he or she is capable of creating. Thus there is a fundamental problem with people whose productivity is below the benefit that the welfare state is willing to provide. These people, in principle, cannot find a job in a market economy under traditional policies. The wage has to be above their benefit to make them offer their labour, and the wage has to be below productivity to make firms demand this labour. The two conditions are mutually exclusive. The wage replacement policy turns out to be a policy of increasing the reservation wage – the wage below which a worker will refuse a job – and of preventing the creation of jobs that otherwise would have been available.

Figure 1



This problem used to be minor when benefits were low relative to average incomes. However, the gradual expansion of the welfare state has increased the number of people who are affected and has therefore increased the number of unemployed, in particular among the less educated, whose productivity is low relative to the minimum income that the state provides them.

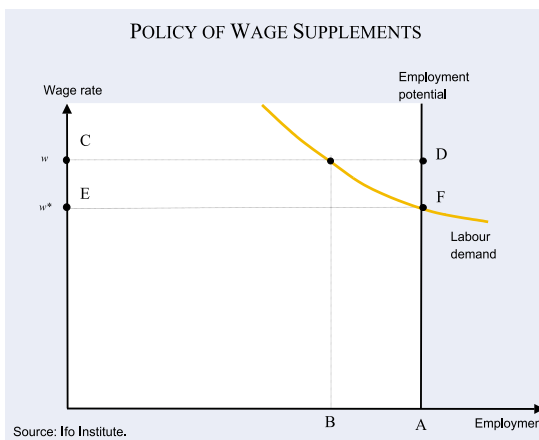
The policy of providing social and unemployment assistance by replacing labour income has not only destroyed jobs by increasing reservation wages, it has also worked as a policy of subsidising black market activities. It is true, of course, that this was not intended, but as informal labour is the natural alternative to formal labour and as the payment of benefits stops when formal labour income is obtained, it is clear how the incentives have worked (EEAG 2002, Ch. 6).

**Welfare policy of wage supplementation**

The alternative to a policy of wage replacement is a policy of wage supplementation. Benefits are not given on condition of staying away from formal employment but on condition of participating in it and nevertheless not earning enough. Figure 2 illustrates the underlying mechanism. There is a well-defined demand curve for labour of relatively low productivity as a function of its (net) cost to the employer and an inelastic supply of labour. The market-clearing wage cost to the employer would be  $w^*$ . It is assumed that the corresponding net wage is below the socially acceptable minimum wage.

A wage replacement policy offering a public benefit payment of the minimum socially acceptable

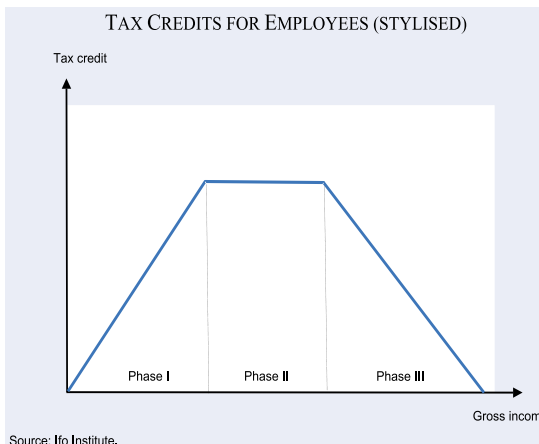
Figure 2



income places a floor under the market wage (resulting in wage costs to the employer of  $w$ ) and causes unemployment of  $A - B$ . Under the alternative policy of supplementing low earnings from public resources there is no floor to the market wage. The wage will fall to a level where the corresponding wage cost to the employer is  $w^*$ . Unemployment disappears. The income of low skilled workers is brought up to the socially acceptable level by an employment subsidy corresponding to  $w-w^*$ , costing the government an amount represented by the area CDFE.

Benefits supplementing wages (that is to say tax credits in the UK) do not only affect the decision of the unemployed whether or not to participate in the labour market but affect also those who are already in employment. Their market wage will be depressed by the new wage supplement policy. In addition, the volume of the labour services they are prepared to supply will be affected. This can be illustrated by the typical pattern of a tax credit for employees.

Figure 3



**Table 2**  
**Incentives for additional labour supply by granting employees a tax credit**

	Phase I	Phase II	Phase III
Substitution effect	positive (tax advantage for additional hours worked)	none	negative (implicit tax on additional hours worked)
Income effect	negative	negative	negative
Total effect	?	negative	negative
Source: Ifo Institute.			

In Figure 3 the amount of the tax credit is a function of gross income. Three phases can be distinguished: at first the tax credit increases as income increases (phase I), in a second phase it remains constant, and beyond a certain level of income it decreases (phase III). The effect of the tax credit on total hours worked is different in the three phases.

Two effects must be distinguished: the income and the substitution effect. By increasing the net income of employees the subsidies make it possible for the beneficiaries to enjoy more leisure and reduce working time (income effect). At the same time, the subsidies change the relative prices of work and leisure, which leads to substitution effects, whose strength varies according to the tax credit phase (see figure 3). For a worker in the initial phase, the tax credit creates incentives to work

more and to reduce time away from work. In phase II substitution effects no longer take place. And finally, in phase III the individual worker no longer has any incentive to work more; by withdrawing the tax credit additional income is effectively taxed which creates a disincentive for the supply of additional working hours. The sum of income and substitution effect is in phase II and III negative and in phase I indeterminate. Only empirical studies can tell us how the supply of labour will in fact respond (see Table 2) (Ochel 2001).

### The Working Families' Tax Credit in Great Britain

In-work benefits have a long tradition in Great Britain. As early as 1971 the Family Income Supplement was introduced; in 1988 this was replaced by the Family Credit (FC) and in 1999 its place was taken by the Working Families' Tax Credit (WFTC). The WFTC was subsumed within the Child Tax Credit (CTC) and the Working Tax Credit (WTC) in April 2003.

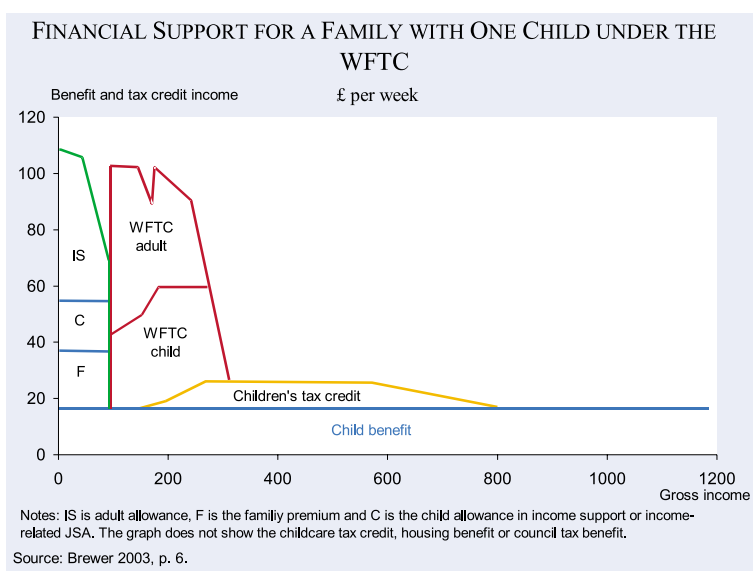
The WFTC aimed to increase the net income of low wage earners. An incentive was created to accept work with low pay. Families with at least one dependent child were entitled to the WFTC if one adult worked at least 16 hours a week. Families with net assets exceeding £ 8,000 were excluded.

The tax office had got the operative responsibility. The basic amount for an adult was £ 59.00 per week in 2001; children's credits ranged between £ 26.00 and £ 26.75. If more than 30 hours were worked per week the credit increased by £ 11.45. Cost of child care were added to the WFTC in the proportion 70 percent of eligible child care costs up to an upper limit of £ 94.54 weekly (for families with two or more children £ 140). Single parents could claim this entitlement if she or he worked more than 16 hours a week; for couples with a child or children both had to work more than 16 hours. In taking into account the household's net income, an exemption of £ 92.90 per week was allowed. For

**Table 3**  
**Parameters of the Working Families' Tax Credit in Great Britain, 2001**

Basic tax credits (£ per week)	
Adult	59.00
Children	
between 0 – 10 years of age	26.00
between 11 – 15 years of age	
between 16 – 17 years of age	26.75
18 years old	
Treatment of child care costs	Child's tax credit increased by 70% of child care costs up to £ 140 a week.
Withdrawal rate (per cent)	55
Income threshold (£ per week)	92.90
Upper limit to assets allowed (£)	8,000
Minimum work week (hours)	16
Additional credit if work week exceeds 30 hours (£)	11.45
Responsible authority	Tax office
Source: Inland Revenue 2001.	

Figure 4



net income exceeding £ 92.90, a withdrawal rate of 55 percent was applied (see Table 3).

In order to determine the incentive effect of the WFTC it is necessary to compare the in-work benefits with the out-of-work benefits. People in employment with a dependent child or children in the low-wage brackets who worked at least 16 hours a week received the WFTC as well as a generous allowance for the expenses of child care (child tax credit). For the unemployed or for those with a weekly working time of less than 16 hours there was the Job Seeker Allowance (JSA) or the Income Support (IS).<sup>1,2</sup> In addition, a Child Benefit independent of income was paid (see Figure 4).

The WFTC reduced the net replacement rate considerably. Without WFTC, in 2001 the net replacement rate for a couple with one dependent child was 143 percent in the case of part-time employment, or 92 percent with a full-time job. WFTC resulted in the

<sup>1</sup> The last named applies only to couples with dependants who are ill or disabled and to single parents.

<sup>2</sup> Furthermore, households with low income could receive Housing Benefits and an exemption from local taxes (Council Tax Benefit).

<sup>3</sup> But if one takes into account the Housing Benefit and the Council Tax Benefit, which was much more important for the unemployed or for those with very low incomes, then the net replacement rate was much higher. On the other hand, it was decreased by the generous Child Care Tax Credit, which is not taken into account in the calculations of Table 4.

disposable income of the unemployed being only 76 percent of that of part-time employed or 60 percent of that of full-time employed (assuming the employed were paid the minimum wage). The WFTC had a similar effect on the income position of single parents (see Table 4<sup>3</sup>).

Giving the unemployed strong incentives to work was, however, accompanied by high withdrawal rates when the WFTC entered phase III. Although the withdrawal rate had been lowered from the FCs 70 percent to 55 percent, nevertheless, the marginal tax burden (including the effects of the income tax) remained high. Amongst the 1.1 million families benefiting from WFTC in 2000, 950,000 were in phase III and were subject to a marginal rate of income loss of 60 percent or more, and 210,000 of these were losing benefits and paying taxes to the amount of 80 pence or more on every additional pound earned. This extremely high marginal tax burden cannot fail to have a negative effect on the hours employees are willing to work.

The WFTC and the child tax credit exerted a strong incentive to take up gainful employment. According to estimates by the experts of the Institute for Fiscal Studies, if these in-work benefits had not been in place, a considerably smaller number of unemployed would have found work. As mentioned above, in 2000 1.1 million families – out of 27 million employed – fulfilled the eligibili-

**Table 4**  
**Net replacement rate (with employment at minimum wage) in Great Britain 2001 (in %)**

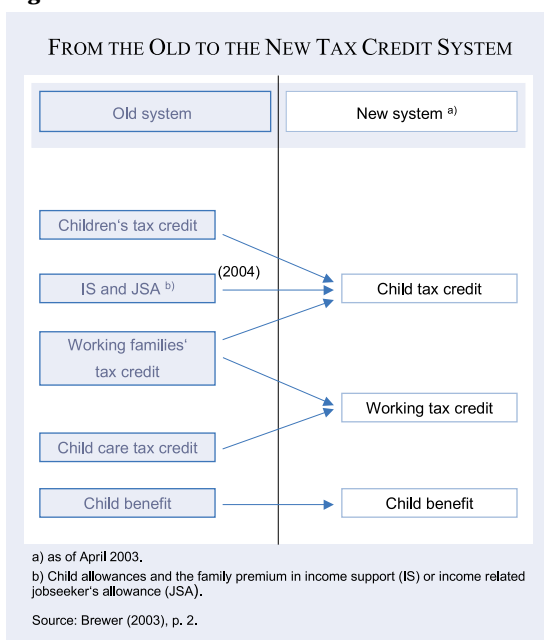
	Single parent, 1 child		Couple, 1 child	
	Part-time employment	Full-time employment	Part-time employment	Full-time employment
A Without WFTC	110	70	143	92
B With WFTC	58	46	76	60

A Net replacement rate = disposable income without work/disposable income with work. The disposable income includes: gross wages, income support, child benefit minus employee's contributions to social security and income tax. Assumptions: minimum wage = £ 3.70 an hour; 4.3 weeks = 1 month; child care costs not included.

B As in A, but WFTC.

Source: M. Brewer 2000, pp. 55, 56 and 58.

Figure 5



ty criteria of WFTC (Brewer 2000, p. 48). (Of course, not all of those benefiting from WFTC were necessarily formerly unemployed.) Simulations carried out by Gregg, Johnson and Reed (1999) and by Blundell et al. (2000) indicate that the strongest incentive to work was exerted by WFTC on single mothers, but also married men and women (without a partner with a job) felt a

strong incentive to work as a result of WFTC. On the other hand, WFTC exerted a negative incentive on married women whose husbands were in work. The rapid increase in employment of single parents (Brewer and Gregg 2001, p. 23) was in all likelihood due to the fact that since the introduction of the Child Tax Credit 70 percent of child care costs had been taken over by the state; this arrangement removed an important obstacle to women's participation in the labour market.

WFTC strongly promoted taking on employment by those previously unemployed. It did not, however, offer any incentives for those already in work to work more hours. Despite the reduction of the withdrawal rate to 55 percent in phase III, the WFTC still led to a high marginal effective tax rate. Hence there was a tendency to limit the total time worked weekly, instead of increasing it. As a result, the proportion of part-time workers with a working week of 16 hours (and more) was high (Blundell 2000, p. 42).

**The new tax credits**

In April 2003 the British Government introduced two new tax credits: the Child Tax Credit and the Working Tax Credit. The CTC now represents the major source of government financial support for children. It is designed to simplify the system of financial support for parents. Entitlement to the CTC does not depend on whether an adult in the family is working. The WTC is designed to make work more financially attractive. It supports adults with and without children in low-paid work. It represents the first substantial policy in the UK to help those without children when they are working.

Figure 5 shows how the new tax credits combined the different parts of the old system. The children's tax credit, child allowances and the family premium in income support or jobseeker allowance and part of the WFTC were subsumed within the CTC. The main part of the WFTC and the childcare tax credit (which was part of the WFTC) were subsumed within the WTC. The child benefit, a universal, non-means-tested payment remained unaffected by the reform.

In 2003-04 the WTC consists of the following:

- Single people without children are entitled to a credit of £ 29.30 a week.

**Table 5**  
**Parameters of the Working Tax Credit in Great Britain, 2003-04**

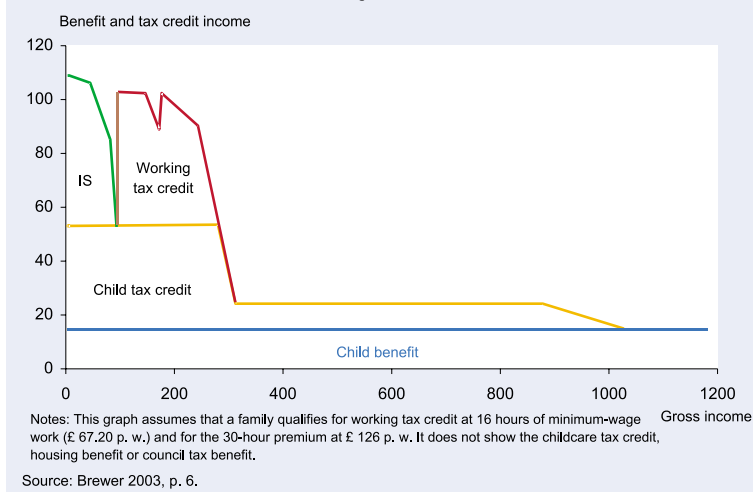
Single people without children (£ per week)	29.30
Couples with and without children and lone parents (£ per week)	58.15
Extra amount for disabled adults (£ per week) <sup>a)</sup>	39.15
Child care element (£ per week)	
• Maximum eligible cost for 1 child	135.00
• Maximum eligible cost for 2 or more children	200.00
• Percent of eligible costs covered	70
Withdrawal rate (percent)	37
Income threshold (£ per week)	97.30
Upper limit to assets allowed (£)	8,000
Minimum work week (hours)	
• with children	16
• without children	30
Additional credit if work week exceeds 30 hours (£ per week)	11.90
Responsible authority	Tax office

<sup>a)</sup> There is an extra amount for people over 50 returning to work as well.

Sources: HM Treasury, Inland Revenue (2002), p. 32; Brewer (2003), p. 5.

**Figure 6**

FINANCIAL SUPPORT FOR A FAMILY WITH ONE CHILD UNDER THE WTC  
£ per week



- Couples with or without children and single parents are entitled to a credit of £58.15 a week.
- Families with children with both adults working can receive help with approved childcare costs.
- Families with children must work 16 or more hours a week to be entitled, and those without children must work 30 or more hours a week.
- There is a bonus of £ 11.90 a week for those working 30 or more hours a week.
- Families with annual incomes below £ 97.30 a week are entitled to the full amount. Incomes above this level reduce entitlement at the rate of 37 p per pound (before deducting income tax and National Insurance)<sup>4</sup> (Brewer 2003, p. 5; Table 5).

The structures of the new tax credits are illustrated in Figures 6 and 7.

It is too early to say how the WTC affects employment. Experts of the Institute of Fiscal Studies, however, have made some predictions. Comparing the WTC with the WFTC, they have come to the conclusion that the WTC will improve the financial reward for primary earners moving into work in two-

<sup>4</sup> WFTC awards used to be reduced by 55 p for every pound of income in excess of some threshold after deducting income tax and National Insurance.

<sup>5</sup> This contrasts strongly to the research findings for those with children that supported the introduction of the WFTC for families with children (HM Treasury 1998).

person households and worsen it for second earners. This is very similar to the impact of introducing the WFTC.

But how will the WTC affect work incentives of single people? Research results indicate that there is no evidence that individuals without children are deterred from working by inadequate financial incentives.<sup>5</sup> If there is an incentive effect at all, it relates to taking on a job. On first examination, this seems to have been encouraged. However, WTC probably did not motivate those with jobs

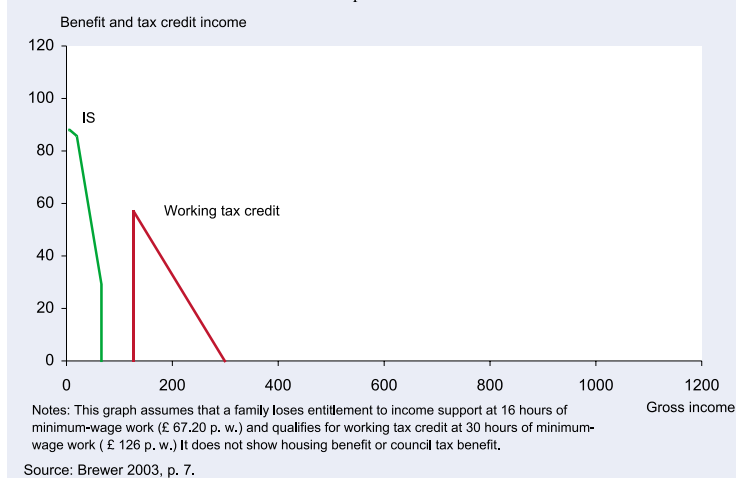
to increase their weekly working hours. The contrary is more likely, since a high percentage of single, low-wage earners were faced with an increase in the effective marginal tax rate (Brewer 2003, p. 12).

**Conclusion**

A wage replacement welfare policy prevents the creation of jobs for low skilled workers. The alternative is a policy of wage supplementation as pursued in the UK with its WFTC and since 2003 its WTC. These tax credits strongly promote taking on employment (with a minimum of 16 hours per week) by those previously unemployed. They do not, however, offer any incentives for those already in work to work more hours.

**Figure 7**

FINANCIAL SUPPORT FOR A COUPLE WITHOUT CHILDREN UNDER WTC  
£ per week



## References

- Blundell, R. (2000), "Work-Incentives and 'In-work' Benefit Reforms: A Review", *Oxford Review of Economic Policy* 16(1), 27-44.
- Blundell, R., A. Duncan, J. McCrae and C. Meghir (2000), "The Labour Market Impact of the Working Families' Tax Credit", *Fiscal Studies* 21 (1), 75-104.
- Brewer, M. (2000), *Comparing In-Work Benefits and Financial Work Incentives for Low-Income Families in the US and the UK*, London.
- Brewer, M. (2003), *The New Tax Credits*, IFS Briefing Note No. 35.
- Brewer, M. and P. Gregg (2001), *Eradicating Child Poverty in Britain: Welfare Reform and Children since 1997*, London.
- European Economic Advisory Group at CESifo (2002), *Report on the European Economy*, München.
- Gregg, P., P. Johnson and H. Reed (1999), *Entering Work and the British Tax and Benefit System*, London.
- HM Treasury (1998), *Work Incentives: A Report by Martin Taylor*, The Modernisation of Britain's Tax and Benefit System 2, London.
- HM Treasury, Inland Revenue (2002), *The Child and Working Tax Credits*, The Modernisation of Britain's Tax and Benefit System 10, London.
- Inland Revenue (2001), *Working Families' Tax Credit*, WFTC/BK 1 (<http://inlandrevenue.gov.uk>).
- Ochel, W. (2001), "Financial Incentives to Work-Conceptions and Results in Great Britain, Ireland and Canada", *CESifo Working Paper No. 627*.



## LABOUR DISPUTE RULES AND STRIKES IN THE EUROPEAN UNION

WOLFGANG OCHEL AND  
MARKUS SELWITSCHKA

### Declining volume of labour disputes

From time to time, the media give the impression of a European economy plagued by labour disputes. But this picture is misleading. Europe enjoys a high level of industrial peace which has increased over the last thirty years. Nevertheless, there is a considerable difference between the various countries of the European Union in this respect, as can be seen from the statistics on labour disputes published by the International Labour Office (ILO).

As a rule, three indicators are used to describe the severity of a labour dispute: participation, duration and volume. The participation relates the employees taking part in the labour dispute to the number of labour disputes. Within the period from 1971 to 2000, in the twelve EU countries (excluding Germany, France and Luxembourg due to lack of data) on average a good 1000 employees were involved in each labour dispute, with the numbers ranging from 264 in Finland to 3271 in Austria. Neither a rise nor a decline in strike participation could be observed (Lesch 2002).

However, the duration of strikes declined in all these countries (with the exception of Finland). Thus 14 working days were lost per strike in Ireland during the nineteen seventies for each employee involved, whereas this had dropped to only six days in the nineties. In Germany, the duration of strikes declined from 6.3 days to 1.6 days and in Great Britain from 8.5 days to 2.7 days (Fig. 1).

But the most significant parameter was the decline in the volume of labour disputes. This factor

designates the number of working days lost referred to the number of dependent employees. The volume of labour disputes has declined considerably in the last 30 years in all EU member states. This trend is illustrated by Fig. 2, which compares the number of working days lost in the nineties with those lost during the period 1971/2000.

There is, nevertheless, a considerable gradient within the European Union. Labour disputes are particularly disruptive in Spain, Greece and Italy, but also in Finland and Ireland, even if the number of working days lost due to strikes has greatly declined, especially in Italy. Among the economies relatively free of strikes are Austria, Germany and the Netherlands. Thus in Germany only 11 work days were lost due to strikes for every 1000 employees in the nineties. On the basis of a daily working time of 7.40 hours, this corresponds to about 5 minutes per year and employee.

### Reasons for the decline in volume of labour disputes

Macroeconomic reasons, changes in the manufacturing conditions of companies and politico-institutional factors are responsible for the decline in the volume of labour disputes. The most salient of the macroeconomic reasons is the structural change in the economy. In most EU countries, labour disputes are still concentrated in the manufacturing sector, whereas the service sector remains largely free from them (Davies 2001). This shows that work days lost due to labour disputes

**Figure 1**

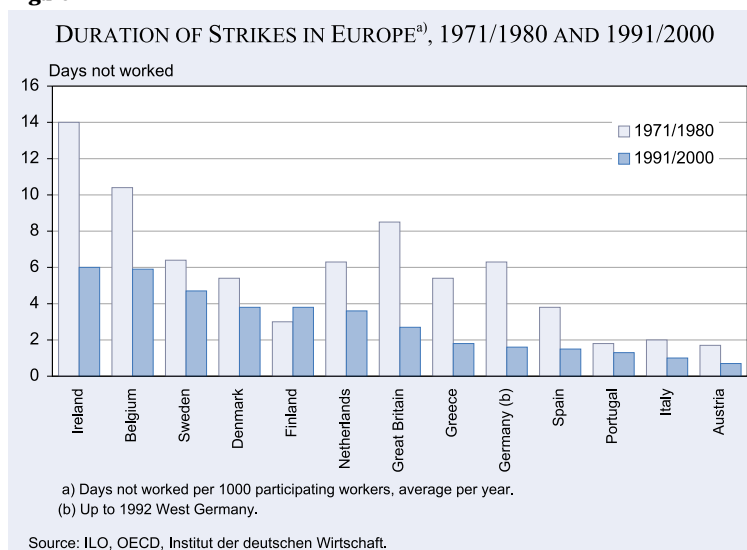
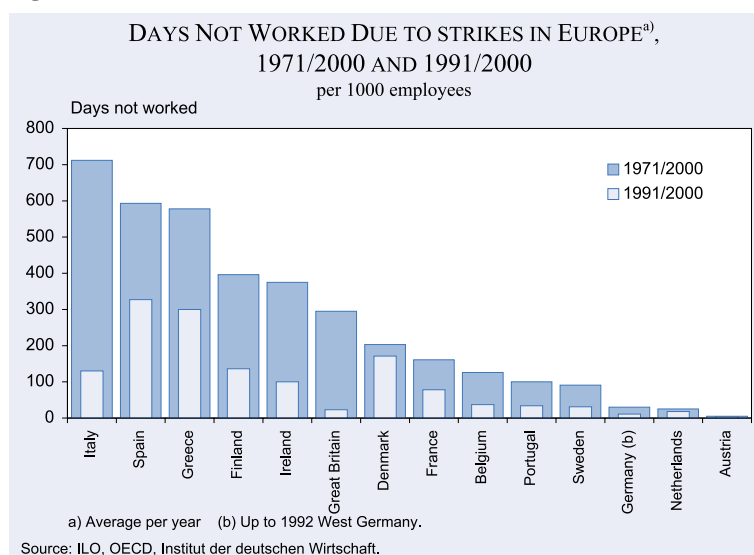


Figure 2



are declining as the economy becomes increasingly dominated by the tertiary sector. Beyond this, lower inflation in the EU appears to have led to fewer strikes. If the expected inflation rate declines, the wage demands of the unions, which aim to safeguard real incomes, also decline. The uncertainty with respect to the expected inflation rate declines and the conflict potential between unions and employers is consequently reduced. (There appears to be no unequivocal relationship between the level of unemployment and the volume of labour disputes.)

In addition to these macroeconomic factors, changes in manufacturing conditions have also reduced the volume of labour disputes. The reduction of vertical integration by outsourcing and the limitation of inventories by just-in-time production have increased the susceptibility of the production process to disruption. Pinpointed strikes today allow the same effects to be achieved as those which previously required mass strikes. This is likely to have made employers more willing to make concessions and avoid strikes.

Finally, the lower level of union organization, which depletes strike funds and weakens the potential for mobilization, has also contributed to the decline in the volume of labour disputes. As can be seen from Table 1, the degree of union organization in Germany, France, Greece, Great Britain, Ireland, the Netherlands, Austria and Portugal has declined. In the other countries it has remained constant or has risen. However, the increase in the degree of union organization in Belgium, Denmark, Finland and

Sweden cannot necessarily lead us to conclude a greater belligerence on the part of the employees. In these countries, membership of the unions is already worthwhile because they provide voluntary unemployment assurance (generously subsidized by the state) (Boeri, Brugiavini, Calmfors 2001, p. 172).

### Labour dispute rules and national frequency of strikes

In order to explain the differences in the volume of labour disputes between different countries, apart from the national peculiarities relating to the parameters already mentioned, the rules on labour disputes, which vary from country to country, must also be brought into the picture. One set of these rules must be observed when initiating a labour dispute. This includes the obligation to maintain industrial peace which prohibits the partners to the collective bargaining agreements from initiating labour disputes during the term of such agreements, the arbitration procedures which must be followed before a labour dispute breaks out, and the stipulation to conduct a ballot prior to a walk-out. Secondly, the rules on labour dispute restrict the legality of both strikes and lock-outs. The obligation to maintain industrial peace, arbitration procedures (with the exception of mandatory state arbitration, which usually comes into force too late), ballots and the restriction of the range of

**Table 1**  
Level of union organization<sup>a)</sup> in %

	1970	1980	1990	1998
Austria	57	52	47	39
Belgium	42	53	50	54 <sup>b)</sup>
Denmark	63	78	75	76
Finland	51	69	73	79
France	20	22	14	10
Germany	32	35	32	26
Great Britain	45	51	38	30
Greece	n. a.	36	34	24 <sup>b)</sup>
Ireland	53	57	53	42
Italy	37	50	39	38
Netherlands	37	35	24	23
Portugal	n. a.	52	40	30 <sup>b)</sup>
Spain	n. a.	8	11	16
Sweden	67	78	82	88

a) Without pensioners. – b) 1995.

Source: Ebbinghaus and Visser (2000).

Table 2

## Pre-strike regulations

	Peace Obligation	Arbitration	Strike Ballot
Austria	Yes	Public arbitration is possible. <sup>a)</sup>	No
Belgium	Yes	Arbitration is possible but an exception. <sup>a)</sup>	No
Denmark	Yes	At failure of the collective agreement public arbitration, constraining. <sup>b)</sup>	Yes
Finland	Yes	Binding participation at public arbitration. <sup>c)</sup>	No
France	No <sup>d)</sup>	Voluntary participation at public arbitration; very rare. <sup>a)</sup>	Possible <sup>e)</sup>
Germany	Yes	Voluntary participation at public arbitration. <sup>a)</sup>	Yes
Greece	No <sup>f)</sup>	At failure of the collective agreement; public arbitration is voluntary. <sup>g)</sup>	No
Ireland	Yes <sup>h)</sup>	Voluntary participation at public arbitration. <sup>i)</sup>	Yes
Italy	Yes <sup>j)</sup>	Voluntary participation at public arbitration. <sup>a)</sup>	No
Luxembourg	Yes	Constraining participation at public arbitration. <sup>k)</sup>	No
Netherlands	Yes	In the private sector no formal arbitration system exists <sup>a)</sup> ; constraining participation at public arbitration at the public sector.	Yes
Portugal	Restricted <sup>l)</sup>	At failure of the collective agreement voluntary conflict resolution; if failing public arbitration, constraining. <sup>b)</sup>	No
Spain	Yes	At failure of the collective agreement public arbitration, constraining. <sup>b)</sup>	Possible <sup>m)</sup>
Sweden	Yes <sup>n)</sup>	Facultative public arbitration.	No <sup>o)</sup>
United Kingdom	Possible	Facultative arbitration. <sup>p)</sup>	Yes

<sup>a)</sup> Predominantly voluntary conflict resolution by the parties of the collective agreement. – <sup>b)</sup> Decisions are final and cannot normally be overturned. – <sup>c)</sup> Decisions are optional. – <sup>d)</sup> Strikes are lawful during the lifetime of agreements. – <sup>e)</sup> At the discretion of the unions. – <sup>f)</sup> Greek law contains no provisions relating to peace obligation. – <sup>g)</sup> Decisions have the same standing in law as a collective agreement. – <sup>h)</sup> By several social agreements. – <sup>i)</sup> By the Labour Relations Commission. – <sup>j)</sup> Obligation placed on workers' organizations that have signed a collective agreement to refrain from calling strikes. – <sup>k)</sup> Awards are not binding but generally accepted. – <sup>l)</sup> Does apply to the parties of the collective agreement but not to the individual employee. – <sup>m)</sup> It is not obligatory by law but it has become widespread practice in the Spanish industrial relations system. – <sup>n)</sup> Solidarity strikes are possible. – <sup>o)</sup> In many cases there are now council conventions in single unions. – <sup>p)</sup> By the Advisory Conciliation and Arbitration Service.

Sources: EMIRE, Database of the European Foundation for the Improvement of Living and Working Conditions; European Commission (1998 and 2000).

legal strikes have an equally debilitating effect on strikes as the legalization of lock-outs.

It can be seen from Tables 2 and 3 that the EU countries follow a varied mix of rules relating to labour disputes. With the exception of France and Greece, the obligation to maintain industrial peace is part of the legal order of all EU countries. Arbitration procedures in collective-bargaining conflicts are also usual in all member states. However, state arbitration agencies come into play to a varied degree. State efforts at arbitration which are mandatory on the collective-bargaining partners are found in Denmark, Portugal and Spain. In some countries, ballots must precede labour disputes. The range of legal strikes is constrained in various ways by the national legislators. Various forms of strike activity are available to employees in Belgium, Finland, France, Greece,

Italy, Portugal, Spain and Sweden. In most of these countries, employers can protect themselves with the aid of lock-outs.

If we arrange countries according to whether they favour strike-reducing or strike-promoting rules on labour disputes, we find the following groups. Strike-reducing rules are applied in Austria, Denmark, Germany, Ireland, the Netherlands and Great Britain. Four of these countries showed the lowest number of days of work lost due to strikes per 1000 employees in the nineties. Only in Ireland and Denmark did this set of rules not reduce the volume of labour disputes. In contrast, strike-promoting rules tend to be applied in Belgium, France, Greece, Portugal and Spain. Greece and Spain suffered many strikes in the nineties, whereas the other countries showed a lower volume of labour disputes. On the whole a certain correlation seems

Table 3

## Lawfulness of strikes and lock-outs

	Strikes		Lock-outs
	Political	Other	
Austria	Unusual	Only official strikes organized by trade unions; strikes are considered as an uncommon instrument of conflict resolution.	Yes
Belgium	Yes	Various forms are legal.	No
Denmark	No	Official strikes legal; protest strikes unlawful (but only small financial penalty); selective strikes: common.	Yes
Finland	Yes	Various forms are legal.	Yes
France	Yes	Various forms are legal (including unofficial strikes, selective strikes etc.); rotating strikes prohibited in the public services.	Restrained <sup>a)</sup>
Germany	No	A strike is lawful only if it is conducted by a trade union.	Yes <sup>b)</sup>
Greece	Yes <sup>c)</sup>	Various forms are legal.	No
Ireland	Unusual	Organization by trade unions is not strictly necessary.	Yes
Italy	Yes	Various forms are legal.	Restrained <sup>d)</sup>
Luxembourg	n.a.	Strikes without preliminary conciliation procedures are unlawful.	No <sup>e)</sup>
Netherlands	Yes	Official strikes organized by trade unions.	Yes <sup>f)</sup>
Portugal	Yes	Most strikes are perfectly lawful.	No
Spain	Yes <sup>g)</sup>	Various forms are legal (intermittent, sympathy, general); rotating and wildcat strikes are unlawful.	Restrained <sup>h)</sup>
Sweden	Yes	Various forms are legal.	Yes
United Kingdom	No	Official strikes in accordance with the rules of a trade union.	Yes
<sup>a)</sup> As a general principle, lock-outs are deemed to be unlawful; but courts allow lock-outs in the case of "compelling circumstances" (in the event of a strike which is unlawful; improper use of the right to strike); defensive lock-outs are prohibited. – <sup>b)</sup> Offensive lock-outs are unlawful. – <sup>c)</sup> If it relates to employment – related demands. – <sup>d)</sup> Defensive lock-outs may be legal under certain conditions. – <sup>e)</sup> Lock-outs without preliminary conciliation procedures are unlawful. – <sup>f)</sup> No lock-outs since 1945. – <sup>g)</sup> Politico-industrial strikes under certain conditions. – <sup>h)</sup> Only when persons or property are in danger.			
Source: EMIRE, Database of the European Foundation for the Improvement of Living and Working Conditions; European Commission (1998).			

– at first sight – to exist between the forms of the rules relating to labour disputes and the volume of these disputes. It is, however, rather weak.

## References

Boeri, T., A. Brugiavini and L. Calmfors (eds.) (2001), *The Role of Unions in the Twenty-First Century*, Oxford.

Davies, J. (2001), "International Comparisons of Labour Disputes in 1999", *Labour Market Trends* 109 (4), 195–201.

Ebbinghaus, B. and J. Visser (2000), *Trade Unions in Western Europe since 1945*, London, New York.

Europäische Kommission (1998), *Die Regelungen der Arbeitsbedingungen in den Mitgliedstaaten der Europäischen Union*, Luxembourg.

Europäische Kommission (2000), *Arbeitsbeziehungen in Europa 2000*, Luxembourg.

Lesch, H. (2002), "Streik und Arbeitskämpfregeln im internationalen Vergleich", *iw-trends* 2, 5–17.

## FISCAL MONITORING IN THE EURO-AREA

Since the introduction of the Euro, monetary policy has been centralised while fiscal and wage policies have not. For fiscal policy, however, the Stability and Growth Pact of 1997 (Maastricht Treaty) sets up a monitoring and intervention mechanism that aims at reducing budget deficits

and public debt levels in order to support (or at least not to counteract) the monetary policy measures of the European Central Bank. This mechanism rests essentially on three pillars, which are described in the table:

- A medium-term early warning mechanism (Stability Programmes),
- a short-term system for monitoring the implementation of the Stability Programmes
- and an Excessive Deficit Procedure.

### Fiscal Monitoring in the Euro Area: Three Pillars

Early Warning Mechanism	Implementation of the Stability Programmes	Excessive Deficit Procedure (abbreviated version)
<p>1. <b>Annual submission</b> (before 1 March) of "<b>Stability Programmes</b>" (Euro countries) and of "<b>Convergence Programmes</b>" (non-Euro EU member) to ECOFIN Council, to EFC and to EC.</p> <p><b>Content</b> (for both types of programmes):</p> <ul style="list-style-type: none"> <li>• medium-term development of budgetary position; target according to "Pact": close to balance or in surplus</li> <li>• main underlying assumptions</li> <li>• relevant budgetary and other economic policy measures</li> <li>• sensitivity analysis of changes in the main economic assumptions</li> <li>• coverage of preceding, current and at least 3 following years.</li> </ul> <p>2. EC and EFC elaborate (separately) assessments of the programmes.</p> <p>3. ECOFIN Council examines - on the basis of these assessments and within at most 2 months after submission of the programme</p> <ul style="list-style-type: none"> <li>• whether the medium-term budget objectives provide for a safety margin to avoid an <b>excessive deficit</b></li> <li>• whether the assumptions are realistic</li> <li>• whether the measures are sufficient.</li> </ul> <p>4. If ECOFIN Council considers that the objectives and contents of a programme should be strengthened, the Council "shall ... invite the member state concerned to adjust its programme." (1466/97; Art. 5,2)</p>	<p>1. <b>Semi-annually</b> (1 March and 1 September) submission of <b>budgetary data</b> by member states to EC.</p> <p>2. EC and EFC examine (separately) budgetary data, whether they comply with budgetary discipline, i.e. whether there is (a risk of) an <b>excessive deficit</b>.</p> <p><b>Two cases of "budgetary discipline"</b></p> <ul style="list-style-type: none"> <li>• Budget deficit &lt; 3 % and: debt &lt; 60 % or sufficiently diminishing or approaching the reference value (60%) at a satisfactory pace</li> <li>• Budget deficit &gt; 3 %, but: the deficit is not regarded as excessive, because it is exceptional and temporary and close to the reference value and: debt ratio is sufficiently diminishing or approaching the reference value at a satisfactory pace</li> </ul> <p>3. If the EC sees (risk of) an excessive deficit, the <b>Excessive Deficit Procedure</b> (EDP) is started.</p>	<p>1. If there is (a risk of) an excessive deficit, ECOFIN Council is informed by EC and EFC.</p> <p>2. ECOFIN Council (11 euro-area countries + 4 non-euro-area countries; together 87 votes)<sup>3)</sup> decides by qualified majority (i.e. 2/3 of 87) whether the deficit is excessive or not.</p> <p>3. If the deficit is held to be excessive, recommendations (not published) are made to the member state concerned.</p> <p>4. ECOFIN Council assesses the effectiveness of the measures announced by the member state.</p> <p>5. If the measures are regarded as ineffective or not implemented, ECOFIN Council may make its recommendations public and give notice to take own measures.</p> <p>6. If the excessive deficit persists - due to non-implementation or despite implementation - ECOFIN Council applies <b>sanctions</b> on the member state concerned.</p> <p>7. Sanctions will consist in a non-interest bearing deposit of 0.2 % of GDP (fixed component) + a variable component of 1/10 of the difference between factual deficit/GDP and the reference value (3%). 0.5 % of GDP is the upper limit for the deposit. The deposit might be converted into a fine if the excessive deficit has not been corrected within 2 years.</p> <p>a) Number and distribution of votes will change on 1 January 2005 according to article 3 of the enlargement protocol adopted in 2001 at Nice.</p>
<p>Notes: EC: European Commission; EFC: Economic and Financial Committee; ECOFIN Council: Council of Ministers of Economic and Financial Affairs.</p>		

Source: CESifo on the basis of the "Stability and Growth Pact", June 1997.

The institutions charged with implementing the monitoring and intervention system are the European Commission (EC), the Economic and Financial Committee and the ECOFIN Council. The European Central Bank plays an important role in critically analysing the most recent versions of the Stability Programmes as well as the most recent budgetary performance of the euro-area countries.

From the outset of the Maastricht Treaty, economists have criticised the narrow, inflexible and unclear definition of “budgetary discipline”. According to the Treaty, budgetary discipline (see table) may not exist with a budget deficit of less than the famous 3 percent of GDP, but it may exist with a budget deficit that is higher than 3 percent. The latter case depends on whether the deficit is regarded as not “excessive”, namely exceptional, temporary and close to 3 percent. Thus, business cycle fluctuations are taken into consideration by the Treaty, but in a poorly defined manner. Instead, one should consider the *cyclically adjusted (or structural) budget deficit*.

The – more or less informal – consensus that has now been formed in Europe relates the 3 percent budget deficit rule to the cyclically adjusted budget. That means: if the total deficit (e.g. due to a business cycle downswing) exceeds the 3 percent limit but the structural deficit does not, the deficit is not regarded as excessive.

However, some countries, like France and Germany, experience even structural budget deficits which have been in 2002 at around 3 percent (total deficit of around 3.7 percent). A consensus in Europe has been reached that in such cases an excessive deficit procedure can only be avoided if the structural deficit is reduced by at least 0.5 percentage points per year.

The current period of weak growth in several European countries shows that the past efforts and achievements – during better times – in reducing the budget deficits have not been courageous enough to provide sufficient leeway for counter-acting a business cycle downswing.

For further information see DICE Database, especially the following tables:  
Fiscal Monitoring in the Euro Area: Procedure with an Excessive Deficit;

Stability Programmes and Stability Performance of the Euro Member States;  
Cyclically Adjusted Net Lending or Net Borrowing in Europe.

R.O.

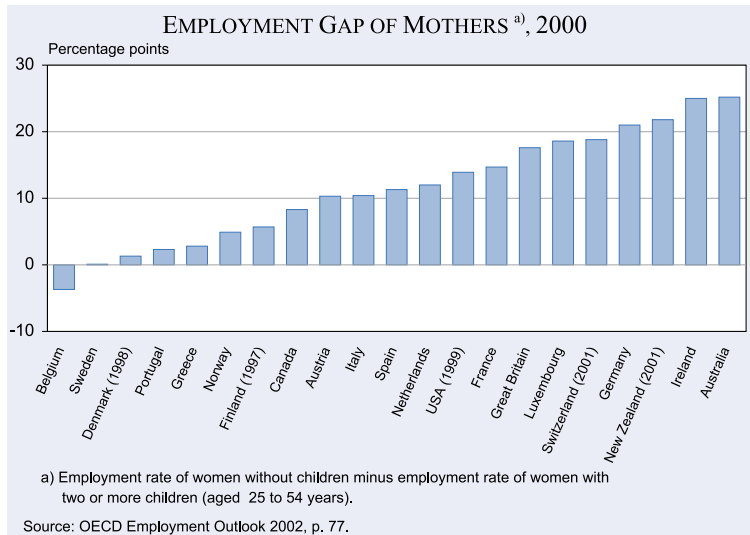
## CHILDREN – AN OCCUPATION CONSTRAINT FOR WOMEN

A survey conducted in 1998 concluded that an overwhelming majority of women with children would like to work. However, OECD statistics show that in some countries an insufficient number of mothers is able to realise this wish. Comparing the employment rate of women with two or more children with that of women without children (of ages ranging from 25 to 54), Australia, Ireland, New Zealand and Germany are countries with a gap between these groups of more than 20 percentage points. In Belgium, Sweden, Denmark, Portugal, Greece and Norway, the gap was less than five percentage points in 2000. This means that women with children in these countries are able to realise their desire to work as easily as women without children (Fig. 1).

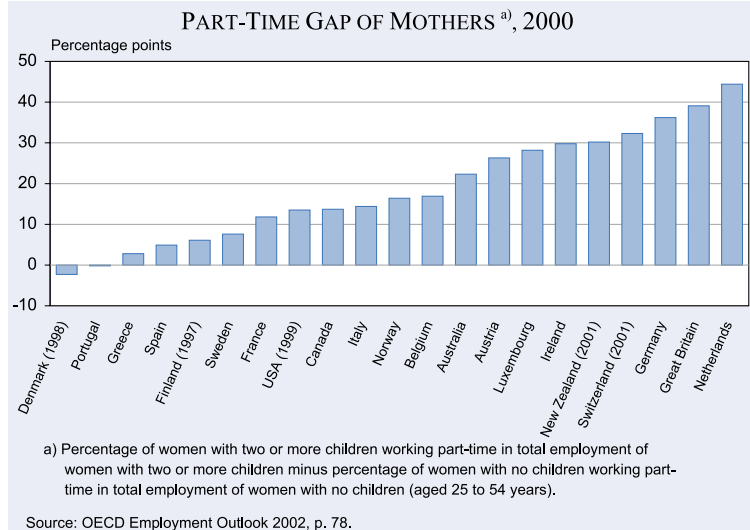
A second indicator for the difficulties of mothers to find jobs is the percentage of part-time employees in the total working population of women with or without children. The percentage of part-time employment of women with two or more children was more than 30 percentage points higher than the percentage of part-time employment of childless mothers in the Netherlands, Great Britain, Germany and Switzerland (Fig. 2). In contrast to these countries, women with children in Denmark, Portugal, Greece, Spain, Finland and Sweden encounter conditions that allow them to assume full-time as readily as part-time employment.

W. O.

**Figure 1**



**Figure 2**



## WAITING FOR SURGICAL OPERATIONS

In several European and non-European countries it is not possible for patients to get a (non-vital) surgical operation immediately or at a specific date that has been determined as optimal by patient and doctor. Rather, there is a waiting time to be respected. As Table 1 shows, such waiting times are not the exception but the rule, and a considerable part of the population is affected.

The average waiting time can be substantial, as is the case for cataract operations in Finland (60 to 360 days) or for orthopaedic operations in Great Britain (165 days) or for plastic surgery in Norway (246 days). In most of the countries that experience waiting times the waiting is organised in the form of official waiting lists which are often made transparent by internet publication.

Waiting lists can be regarded as a type of (non-price) rationing, an instrument to cope with under-capacity of surgery (mainly of surgeons and/or equipment). In a public health system

that offers free medical treatment waiting lists might have a social rationale if (if!) the waiting lists are organised in such a way that the surgical cases of lowest individual utility have to wait the longest.

An obvious explanation of waiting times is the lack of surgical capacity. But this argument is superficial because one must ask why the capacities have not been extended or why and how the lack of extension has been politically possible.

A partly answer is offered by Table 2, which relates the existence of waiting times to the type of financing (by taxes or by contributions) of the expenditures for the public health system. The differentiation of the two country groups (with and without waiting times) by type of financing is strongly selective: The waiting-time countries generally have a high share of tax financing, the other group a high share of financing by contributions to a social health insurance system. For a tax financed public health system it is obviously politically easier to keep the costs of the health system lower by lower investment in new equipment than is the case for a contribution-financed system. Or,

**Table 1**

**Waiting Time**

	Waiting time		Percentage of population on waiting lists	Cataract surgery	Orthopedic surgery	Plaste surgery
Australia		yes	0.9 %	73 days	53 days	24 days
Austria	no		–	–	–	–
Belgium	no		–	n.a.	–	–
Canada		yes	1.6 %	70 days	48 days	46 days
Denmark		yes	n.a.	184 days	n.a.	n.a.
Finland		yes	2.5 %	60 - 360 days	180 days	n.a.
France	no		–	–	–	–
Germany	no		–	–	–	–
Greece		yes	n.a.	n.a.	n.a.	n.a.
Ireland		yes	0.7 %	n.a.	n.a.	n.a.
Italy		yes	n.a.	n.a.	n.a.	n.a.
Luxembourg	no		–	–	–	–
Netherlands		yes	0.9 %	112 days	98 days	168 days
New Zealand			2.2 %	n.a.	n.a.	n.a.
Norway		yes	0.9 %	139 days	160 days	246 days
Portugal			n.a.	n.a.	n.a.	n.a.
Spain		yes	0.4 %	59 days	66 days	63 days
Sweden		yes	n.a.	n.a.	n.a.	n.a.
Switzerland	no		–	–	–	–
UK		yes	2.1 %	190 days	165 days	113 days
US	no		–	–	–	–

Notes: The figures relate mainly to 2001.

For more detailed information on waiting time for medical treatment see [www.cesifo.de/DICE](http://www.cesifo.de/DICE).

Sources: OECD Health data 2002; World Health Report 2000; official national sources.



**Table 2**  
**Waiting Lists and Type of Public Financing**  
**of Health Systems**

	Waiting time	Public expenditure for health	
		Share of tax financing, in %	Share of social insurance financing, in %
Australia	yes	100.0	0.0
Canada	yes	98.9	1.1
Denmark	yes	100.0	0.0
Finland	yes	80.4	19.6
Greece	yes	64.8	35.2
Ireland	yes	100.0	0.0
Italy	yes	100.0	0.0
Netherlands	yes	100.0	0.0
New Zealand	yes	100.0	0.0
Norway	yes	100.0	0.0
Portugal	yes	100.0	0.0
Spain	yes	12.8	87.2
Sweden	yes	100.0	0.0
UK	yes	100.0	0.0
<b>Average</b>		<b>89.9</b>	<b>10.2</b>
Austria	no	12.4	87.6
Belgium	no	18.7	81.3
France	no	3.3	96.7
Germany	no	23.4	76.6
Luxembourg	no	17.1	83.0
Switzerland	no	22.1	77.9
US	no	57.9	42.1
<b>Average</b>		<b>22.1</b>	<b>77.9</b>
For more detailed information on waiting time for medical treatment see <a href="http://www.cesifo.de/DICE">www.cesifo.de/DICE</a> .			
Sources: OECD Health data 2002; World Health Report 2000; official national sources.			

expressed differently, it seems to be politically easier to raise the contribution rate for the health system than to raise the general tax rate and to promise to use the extra-revenues for the health system.

R.O.

## EDUCATION AS A PUBLIC GOOD – CLEAR SUCCESS FOR THIRTY YEARS OF EDUCATIONAL POLICY

More than thirty years have passed since an educational state of emergency was proclaimed in most industrialised countries. A major criticism of the educational system was that it was to a large extent the privileged classes who were able to send their children to colleges and universities. It was also criticised that education for girls was not as good as for boys. A social consensus was formed that in the interest of equal starting opportunities access to higher education should be given to everyone with sufficient ability.

The demand for better education for broad strata of the population was in accord with the interest of

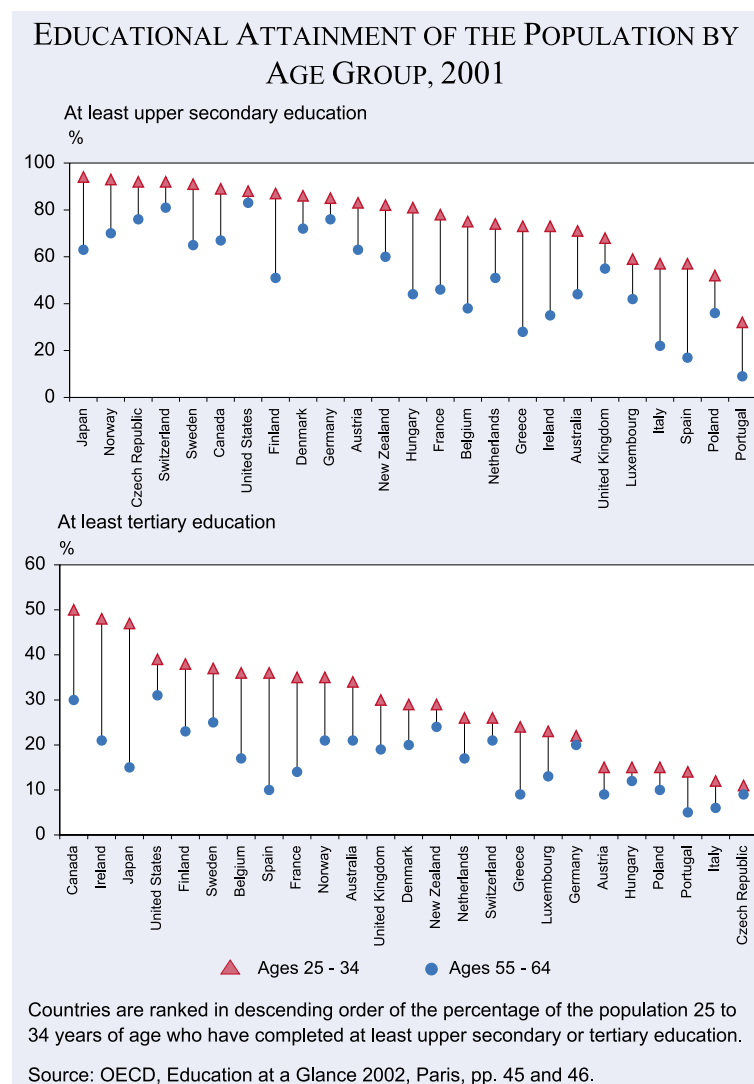
businesses, whose requirements for more highly qualified workers increased. In addition the great importance of human capital was recognised as necessary for economic growth. Correspondingly, the improvement of the educational system met with broad support.

The successes of this past “revolution in education” can be adequately measured thanks to the work of the OECD and EUROSTAT. With the “International Standard Classification of Education (ISCED-97)” a system has been developed with which the different levels of education in the individual OECD countries can be compared and equivalencies determined. There are also statistics that indicate the proportional educational attainments of the population. These statistics are broken down according to age groups. By means of a comparison of the educational attainments of the 25 to 35 age group with that of the 55 to 64 age group, which concluded its educational phase 30 years ago,

conclusions can be drawn on changes in the educational level over the past three decades.

The newest statistics, for 2001, show that the educational level of the population clearly increased in all OECD-countries in the past 30 years. Three quarters of those in the 25 to 34 age group have at least a higher secondary schooling. For the 55 to 64 age group it is less than half. Countries with a low level of educational attainment in an international comparison have caught up on countries with a traditionally higher educational level. Greece and Spain in particular considerably increased the percentage of people in the 25 to 34 age group with a secondary education. Among the countries with a traditionally higher educational level, Belgium and Finland increased the participation in the educational system considerably (see table and figure).

There was also a clear increase in university graduates. In the stud-



**Educational attainment of the population by age group in percent,  
2001**

	At least upper secondary education		At least tertiary education	
	25-34	55-64	25-34	55-64
Austria <sup>a)</sup>	83	63	15	9
Belgium <sup>a)</sup>	75	38	36	17
Czech Republic	92	76	11	9
Denmark	86	72	29	20
Finland	87	51	38	23
France	78	46	35	14
Germany	85	76	22	20
Great Britain	68	55	30	19
Greece	73	28	24	9
Hungary	81	44	15	12
Ireland <sup>a)</sup>	73	35	48	21
Italy	57	22	12	6
Luxembourg	59	42	23	13
Netherlands <sup>a)</sup>	74	51	26	17
Norway <sup>a)</sup>	93	70	35	21
Poland	52	36	15	10
Portugal	32	9	14	5
Spain	57	17	36	10
Sweden	91	65	37	25
Switzerland	92	81	26	21
Australia	71	44	34	21
Canada	89	67	50	30
Japan	94	63	47	15
New Zealand	82	60	29	24
US	88	83	39	31
a) 2000.				
Source: OECD, Education at a Glance 2002, Paris, pp. 37 and 48.				

ied OECD countries, ca. 28 percent of the 25 to 34 age group and ca. 16 percent of the 55 to 64 age group had a university degree in 2001. Japan, Ireland, Spain, France, Canada and Belgium expanded their university education significantly. In all of these countries, more than 30 percent in the 25 to 34 age groups had a university education in 2001. Also in this group were the United States, Finland, Sweden, Norway, Australia and Great Britain.

W. O.

## DEVELOPMENT OF PUBLIC DEBT IN EUROPE

The most recent OECD estimates and projections of "general government gross public debt" extend to 2004. In the table the development of this important variable is shown as a percentage of GDP (public debt ratio).

The majority of EU countries reached the highest level of public debt ratio in the first half of the 1990s (1995 included). For Spain and for the United Kingdom the year with the highest debt ratio was 1996, for France it was 1998, and for Germany 1999.

Starting from the highest value of the debt ratio which had been reached, the majority of countries managed to reduce their debt ratio continuously – or nearly continuously – up to the projected figure for 2004. In some countries this steady reduction has been dramatic. Ireland, e.g., reduced its debt ratio from 96.2 percent (1993) to 32.3 percent

(2004, est.). By contrast, Italy's continuous reduction had been less vigorous: the debt ratio went from 123.8 percent (1994) to 106.6 (2004, est.). Similarly moderate was the development in Greece where the debt ratio fell – albeit not quite continuously – from 110.1 percent (1993) to 99.7 percent (2004, est.).

There are only three countries in the EU that did not continuously reduce their debt ratio from the highest value reached, but witnessed, instead, a rise of the ratio in the first years of the 2000s (up to 2004, est.). These countries are France, Germany and Portugal.

For the European Union as a whole the highest debt ratio reached was 77.8 percent, on average (1996), and this has been continuously reduced to 69.1 percent (2004, est.). The development of all OECD countries was different: In 1996 the average debt ratio (75.2 percent compared to 77.8 percent) was lower than that of the EU countries, while in 2004 (est.) it is projected to be higher (77.7 percent compared to 69.1 percent).

**General Government Gross Public Debt**  
As a percentage of nominal GDP

	1993	1994	1995	1996	1997	1998	1999	2000	2001	Estimates and projections		
										2002	2003	2004
Austria	61.8	64.7	69.2	69.1	64.7	63.9	64.9	63.6	63.2	63.3	62.2	60.2
Belgium	138.1	135.8	133.9	130.5	124.8	119.5	114.8	109.6	108.6	105.4	101.9	97.3
Denmark	78.0	73.5	69.3	65.1	61.2	56.2	52.7	46.8	44.7	41.9	38.7	35.1
Finland	56.0	58.0	57.2	57.1	54.1	48.8	46.8	44.0	43.4	39.8	39.6	39.1
France	45.3	48.4	54.6	57.0	59.3	59.5	58.5	57.3	57.3	59.3	61.2	62.2
Germany	46.9	49.3	57.0	59.8	61.0	60.9	61.2	60.2	59.5	61.7	63.0	63.4
Greece	110.1	107.9	108.7	111.3	108.2	105.8	105.1	106.2	107.0	106.4	103.6	99.7
Ireland	96.2	90.4	82.6	74.2	65.1	55.1	49.6	39.0	36.4	34.1	32.9	32.3
Italy	118.1	123.8	123.2	122.1	120.2	116.3	114.5	110.5	109.8	109.6	108.1	106.6
Luxembourg	5.7	5.4	5.6	6.2	6.1	6.3	6.0	5.6	5.6	6.0	6.0	6.0
Netherlands	78.8	75.7	77.2	75.2	69.9	66.8	63.1	55.8	52.8	51.7	50.6	49.0
Portugal	59.1	62.1	64.3	62.9	59.1	55.0	54.3	53.1	55.4	59.8	59.7	58.9
Spain	..	..	63.9	68.1	66.6	64.6	63.1	60.5	57.1	55.6	54.3	52.8
Sweden	..	76.2	76.2	76.0	73.1	70.5	65.0	55.3	56.6	52.8	52.2	51.5
United Kingdom	45.4	48.5	51.8	52.3	50.8	47.7	45.1	42.1	39.1	39.7	40.4	40.7
European Union	70.4	71.6	76.3	77.8	77.3	76.8	73.3	70.5	69.6	69.9	69.8	69.1
Total OECD	70.4	71.5	74.1	75.2	74.9	75.2	74.6	72.1	73.0	75.0	76.6	77.1

Note: The individual country debt figures are based on ESA95 definitions. The figures for the total of the European Union countries and of the OECD countries are not always fully comparable with the individual country data.

Source: OECD, Economic Outlook, No. 72, Dec. 2002.

The special importance of a satisfying development of the public debt ratio stems from the future burden which is to be expected from the ongoing ageing process in most industrial countries. The OECD estimates that total age-related spending (pensions, early retirement, health, family benefits) must be increased by about 6 to 7 percentage points of GDP during the coming 50 years. While these expenditures currently amount to around 20 percent of GDP, an increase of 6 to 7 percentage points would mean an increase of about 30 percent. This would – and will – put heavy pressures on public finances. Seen in this light, the reduction of the public debt burden must not only be of a continuous but also of a more vigorous nature.

R.O.

## THE WORLD BANK GROUP PROJECT ON LABOUR REGULATIONS

The project gathers data on employment laws and industrial relations laws. Data were also gathered on the specific constitutional provisions governing these two areas. The employment laws and industrial relations laws of most countries are available on-line at the NATLEX database, published by the International Labour Organization. Constitutions are available on-line on the U.S. Law Library of Congress website. The main secondary sources include the International Encyclopaedia for Labour Law and Industrial Relations, and Social Security Programs Throughout the World. Observations were confirmed with more than one source. In most cases both the actual laws and a secondary source were used to ensure accuracy. All conflicting answers were checked with two additional sources, including a local legal treatise on labour and social security laws. If there was further doubt, legal advice from leading local law firms was solicited to confirm accuracy. The current mark of the data refer to January 2002.

Following the OECD Job Study and the International Encyclopaedia for Labour Law and Industrial Relations, the areas subject to statutory regulation in all countries were identified. Those include – within employment laws – alternative employment contracts, conditions of employment, and employment protection; and within industrial labour relations: labour unions, worker participation in management, and collective disputes.

The methodology was developed in Botero, Juan, Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, *The Regulation of Labor*, March 2003.

## INTERNATIONAL REFORM MONITOR: SOCIAL, LABOUR MARKET AND COLLECTIVE BARGAINING POLICIES OF THE BERTELSMANN FOUNDATION

Up-to-the-date reports and analyses about important reforms in social, labour market and collective bargaining policy, best practice reports from 15

countries and the expertise of 19 renowned think tanks and research institutes make the Reform Monitor a valuable source of information for every reformer. The “International Reform Monitor” documents at six-monthly intervals how other countries meet the challenges of the future with reforms. The precisely targeted supply of information to decision-makers in politics, industry and society is designed to give fresh impetus to our domestic reform policies. At the very heart of the project is an international network of renowned research institutes and think tanks in fifteen OECD states who report and analyze, like seismographs, even the most minute topical changes in social, labour market and collective bargaining policy reforms. The results of the network efforts are accessible on the Internet under [www.reform-monitor.org](http://www.reform-monitor.org) and are published every six months.

## IMF, WORLD ECONOMIC OUTLOOK, APRIL 2003

Structural reforms – a catch-all for fundamental institutional changes to improve an economy’s performance – are widely acknowledged as the key to unlocking the full potential of the global economy. Chapter 3 of the new Outlook builds on a recent resurgence of research interest on the role of institutional factors in explaining cross-country differences in economic performance. Economists have increasingly come to recognize that differences across countries in physical capital and in education levels can only go so far in explaining the vast differences observed in incomes across the world. The chapter explores a variety of quantitative measures of institutional quality reflecting, for example, perceptions of the degree of corruption, political rights, public sector efficiency, regulatory burdens and the rule of law. Consistent with other recent work that also tries to control for “reverse causality”, the chapter finds a strong positive correlation between institutional quality and per capita income.

Chapter 4 also looks at institutional reform, but from the much narrower perspective of labour markets. A particular focus is placed on continental Europe, where generous unemployment compensation, centralized wage bargaining processes, strict employment protection (e. g., large firing

costs), and high taxation of labour income all contribute to unemployment rates far exceeding those in the United States. The chapter finds that if European labour market competitiveness were to converge to the U.S. level European unemployment rates would fall dramatically.

## REGULATION AND INVESTMENT

One commonly held view about the difference between continental European countries and other OECD countries, especially the United States, is that the heavy regulation of Europe reduces its growth. Using newly assembled data on regulation in several sectors of many OECD countries, Alberto Alesina, Silvia Ardagna, Guiseppe Nicoletti and Fabio Schiantarelli provide substantial and robust evidence that various measures of regulation in the product market, concerning in particular entry barriers, are negatively related to investment. The implications of their analysis are clear: regulatory reforms, especially those that liberalise entry, are very likely to spur investment (OECD Economics Department Working Paper 352).

## VENICE SUMMER INSTITUTE 2003

CESifo's fourth Summer Institute will be held from 21 to 26 July 2003. Five workshops will focus on:

### *Tax Policy and Labour Market Performance*

Organisers: Peter Birch Sørensen & Jonas Agell  
Keynote speakers: Lans Bovenberg & Stephen Nickell

### *Monetary Unions after EMU*

Organiser: Paul De Grauwe  
Keynote speaker: Michael Artis

### *Insurance: Theoretical Analysis and Policy Implications*

Organiser: Christian Gollier  
Keynote speakers: Pierre-André Chiappori & Mark Pauly

### *Taxation and the Family*

Organisers: Ray Rees, Pierre Pestieau & Alesandro Cigno

Keynote speakers: Robert A. Pollak, Ray Rees, Pierre Pestieau & Alesandro Cigno

### *Economic Stagnation in Japan*

Organisers: Michael Hutchison & Frank Westermann  
Keynote speaker: Takatoshi Ito

## THE RONALD COASE INSTITUTE, WORKSHOP ON INSTITUTIONAL ANALYSIS, SEPTEMBER 6–11, 2003, BUDAPEST, HUNGARY

Scholars who want to learn more about institutional analysis should attend this workshop. Through training, presentations, and exchange, sessions will build the capacity of researchers to conduct empirical analysis in new institutional economics. This is an outstanding opportunity to present current research and get comments and suggestions from established scholars in institutional analysis.

## INTERNATIONAL SOCIETY FOR NEW INSTITUTIONAL ECONOMICS, “INSTITUTIONS AND CHANGE”, 7TH ANNUAL CONFERENCE, SEPTEMBER 11–13, 2003, BUDAPEST, HUNGARY

The International Society for New Institutional Economics (ISNIE) will hold its Seventh Annual Conference at the Budapest University of Economics, September 11–13, 2003. In addition to economics, the conference program will include sessions on the application of institutional analysis to political science, law, and organizational behaviour.

**DICE**  
**Database for Institutional Comparisons in Europe**  
**[www.cesifo.de/DICE](http://www.cesifo.de/DICE)**

The database DICE was created to stimulate the political and academic discussion on institutional and economic policy reforms. For this purpose, DICE provides country-comparative information on institutions, regulations and the conduct of economic policy.

To date, the following main topics are covered: Labour Market, Public Finances, Social Policy, Pensions, Health, Business Environment, Capital Market and Education. Information about Basic Macro Indicators is added for the convenience of the user.

The information provided comes mainly in the form of tables – with countries as the first column –, but DICE contains also several graphs and short reports.

In most tables all 15 EU and some important non-EU countries are covered. Many topics already contain information on the EU accession countries.

DICE consists mainly of information which is – in principle – also available elsewhere. But we think that the access we provide is very convenient for the user, the presentation is systematic and the main focus is truly on institutions, regulations and economic policy conduct. However, some tables are based on empirical institutional research by ifo and CESifo colleagues as well as the DICE staff.

DICE is a free access database.

Critical remarks and recommendations are always welcome.  
Please address them to  
[osterkamp@ifo.de](mailto:osterkamp@ifo.de)  
or  
[ochel@ifo.de](mailto:ochel@ifo.de)



## ORDER FORM

If you wish to subscribe to CESifo DICE Report, please fill in the order form and return to the Press and Publications Department of the Ifo Institute.

Please enter ..... subscription(s) to CESifo Dice Report  
Annual subscription price: € 50.00  
(Members of the Ifo Institute: € 37.50)

Do not send payment. We shall bill you.

### Subscriber's name and address:

Surname .....

Forename .....

Dept./Title .....

Organisation .....

Address .....

.....

.....

.....

Tel. and e-mail .....

.....                      .....

Date                      Signature

Please return (by fax or mail) to:

**Department PRK**  
**Ifo Institute for Economic Research**  
**Poschingerstr. 5**  
**D-81679 Munich, Germany**  
**Tel.: +49-89-9224 1604**  
**Fax: +49-89-9224 1267**



# *Economic Studies*

*Formerly ifo Studien*

Vol. 49, No. 2/2003

**JEAN-CHARLES ROCHET**  
*Toulouse University*

*WHY ARE THERE SO MANY BANKING  
CRISES?*

**JÒN DANIELSSON**  
*London School of Economics*

*ON THE FEASIBILITY OF RISK BASED  
REGULATION*

**CLAUDIO BORIO**  
*Bank of International Settlements, Basel*

*A FRAMEWORK FOR FINANCIAL  
SUPERVISION AND REGULATION*

**MISA TANAKA**  
*University of Oxford*

*THE MACROECONOMIC IMPLICATIONS  
OF THE NEW BASEL ACCORD*

**HANS GERSBACH, JAN WENZELBURGER**  
*University of Heidelberg, University of Bielefeld*

*THE WORKOUT OF BANKING CRISES:  
A MACROECONOMIC PERSPECTIVE*

**MARC QUINTYN, MICHAEL W. TAYLOR**  
*International Monetary Fund*

*REGULATORY AND SUPERVISORY INDE-  
PENDENCE AND FINANCIAL STABILITY*

# IFO WORLD ECONOMIC SURVEY

## World Economic Climate

THE CURRENT SITUATION OF THE WORLD  
ECONOMY REMAINS UNCHANGED

## Economic Expectations

ECONOMIC EXPECTATIONS FOR THE NEXT SIX  
MONTHS SLIGHTLY IMPROVED

## Inflation

NO PICK UP OF INFLATION EXPECTED IN 2003

## Interest Rates

DOWNWARD TREND OF SHORT-TERM AND  
LONG-TERM INTEREST RATES EXPECTED TO  
LEVEL OFF

## Currencies

MAJOR WORLD CURRENCIES NOW CLOSE TO  
SUSTAINABLE EQUILIBRIUM

## Special Topic

WES EXPERTS IN DISAGREEMENT ABOUT THE  
THREAT OF WIDESPREAD DEFLATION AT A  
GLOBAL LEVEL