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CAN LABOUR MARKET INSTITUTIONS EXPLAIN UNEMPLOYMENT RATES IN NEW EU MEMBER STATES?

SJEF EDERVEEN

AND

LAURA THISSEN

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Can Labour Market Institutions Explain Unemployment Rates in New EU Member States?

ENEPRI Working Paper No. 27/June 2004

Sjef Ederveen and Laura Thissen*

Abstract

This study poses the question about whether labour market institutions can explain unemployment rates in the ten new European Union member states. In five out of the ten new member states, unemployment rates lie above the average in the 15 member states of the European Union (EU-15) that comprised the EU prior to May 2004. The study finds that labour market institutions in the acceding countries are less rigid than in the EU-15. Moreover, labour market institutions explain only a minor part of unemployment in the new EU member states. This does not mean that these countries have no labour market problems. Just as in the EU-15, a great deal of heterogeneity exists among the acceding countries. In some of them, labour market reforms could prove a key issue in improving employment performance. The main worry is the poor labour market performance in Poland and the Slovak Republic, where unemployment has risen to almost 20%. The main reasons for this growth are i) postponed restructuring in combination with tight monetary policy; ii) poor governance; and iii) an increasing labour force.

Key words: labour market institutions, social security, wage bargaining, unemployment, transition economies, EU accession countries

* Sjef Ederveen and Laura Thissen are Economists with CPB Netherlands Bureau for Economic Policy Analysis.

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Preface

We are on the verge of a historic moment: on 1 May, the European Union will be enlarged with eight Central or Eastern European countries and two southern European islands. Most of these new member states share a history as centrally planned economies with rigid labour market institutions. Unemployment is perceived to be high among these countries.

This paper studies the relationship between labour market institutions and unemployment in the new EU member states. In particular, it describes the labour market institutions in the new member states and compares them to what is usual in the EU-15. Furthermore, it reviews both the theoretical and empirical literature on the effects that labour market institutions have on unemployment and adds to this literature by assessing the relevance of these mechanisms in explaining unemployment in the four largest new member states. In addition, it elaborates on possible alternative causes of unemployment in Poland and the Slovak Republic.

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F.J.H. Don

Director, CPB
April 2004

Summary

In May 2004, eight Central and Eastern European countries and two southern European islands joined the 15 members of the European Union (EU-15). Fifteen years ago, when most of these countries were under a communist regime, their labour markets were fairly rigid. Many people in the EU-15 therefore worry about the possible consequences of the new situation. Although labour markets in the EU-15 are often blamed for their inflexibility, acting as an impediment to economic development, the rigid systems in the former communist countries would certainly be no better, so the story goes. High unemployment in Poland and the Slovak Republic supports this idea.

But are the labour markets in the new EU member states more rigid than those in the 15 member states of the EU? The general economic view, based on research with OECD countries, suggests that labour market institutions determine the rigidity of a labour market (Nickell et al., 2003). Since flexible labour markets are better equipped to respond to changes in labour supply and demand, unemployment rates are lower in flexible labour markets.

Nowadays, unemployment is above the EU-15-average in five out of ten new EU member states. According to the literature, this may be caused by differences in their labour market institutions. Indeed, in the European Commission's (EC) *Recommendations on the update of the Broad Guidelines of the Economic Policies of the Member States and the Community for 2003-2005*, published in April 2004, the Commission advises the new member states to reform their labour market institutions: to lower their tax wedge, remove disincentives in the benefit system and increase spending on active labour market policies (see European Commission, 2004). Remarkably, the Commission makes little distinction between countries with low or high unemployment rates, although the differences are large – Hungary has an unemployment rate of 6%, whereas unemployment in Poland reaches almost 20%.

Are labour market institutions indeed behind high unemployment rates in some of the new EU member states or are other factors causing high unemployment? After the transition to a market economy began in post-communist countries, labour market institutions have been revised drastically: unemployment benefits have been cut, labour market regulation has been moderated and all countries have moved away from the centralised bargaining system.

Our study concludes that labour market institutions in the new member states do not on average differ that much anymore from the institutions in the EU-15. If anything, they should be considered more flexible:

- Replacement rates are lower and the duration of benefits is shorter – after one year of unemployment no unemployment benefit is issued anymore in three of the four largest acceding countries.
- In the wage-setting process, coordination is lower in the new member states. In general, bargaining takes place at the firm level.
- Employment protection legislation is less strict – only collective dismissal legislation is stricter in the new member states than in most EU-15 countries.
- Minimum wages as a percentage of average wages are lower in the new member states.

Only expenditure on active labour market policies is considerably lower than in the EU-15. This implies that unemployment rates should not be higher in the new acceding states than in EU-15 countries with similar labour markets. Apparently, other factors are behind high unemployment rates in new member states.

This is confirmed by our empirical analysis. We extend the existing empirical work to understand whether the variation in labour market institutions can explain the different unemployment figures of the four largest acceding countries. The results provide some support for the theoretical predictions on the impact of labour market institutions on unemployment. Yet labour market institutions can explain only a minor part of labour market performance in the new member states. They cannot explain the diverging trend since 1998. Since then, unemployment has been rising in Poland and the Slovak

Republic towards 20%, whereas in Hungary and the Czech Republic, unemployment remained stable. These developments suggest that other factors are responsible for unemployment.

Can labour market institutions explain high unemployment rates in the new EU member states? The answer is no. This does not mean that there are no labour market problems in the new member states. Just as in the EU-15, a great deal of heterogeneity exists among the acceding countries. In some of them, labour market reforms could prove a key issue in improving employment performance. The most notable example is Hungary, where a high tax wedge poses problems.

Nevertheless, the main worry with respect to labour market performance is presented by Poland and the Slovak Republic, representing more than half of the population in the new member states. An important role is played by (postponed) restructuring. Both countries enforced major social reforms after 1998 to tackle economic imbalances. When combined with a strict monetary policy, escalating unemployment resulted. Another factor is the relatively low amount of foreign direct investment (FDI) these countries attracted during 1990-2000. A plausible explanation for this lagging performance is the weak regulatory quality along with the relatively unstable political and economic situation in both countries. A final factor behind the increasing unemployment rates is provided by demographic changes: the population in both Poland and the Slovak Republic has been growing modestly in the past 15 years, whereas population has been declining in Hungary and the Czech Republic.

Can Labour Market Institutions Explain Unemployment Rates in New EU Member States?

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1. Introduction

In May 2004, eight Central or Eastern European countries and two southern European islands joined the 15 members of the European Union (EU-15).[1] Under the centrally planned systems most of these countries were subject to, their labour market institutions were rigid: employees enjoyed a high degree of employment protection legislation and pay systems were fairly rigid (Nesporova, 2002). Last April, the European Commission (EC) published its *Recommendations on the update of the Broad Guidelines of the Economic Policies of the Member States and the Community for 2003-2005* (European Commission, 2004). In the recommendations per country, the EC makes remarkably little distinction between countries with high or low unemployment, even though differences are large: Hungary has an unemployment rate of 6%, whereas unemployment in Poland reaches almost 20%. The Commission advises the new member states to lower their tax wedge, remove disincentives in the benefit system and increase spending on active labour market policies – in other words, reform their labour market institutions in order to address poor labour market performance.

This report aims at answering the question of whether or not labour market institutions can explain the large differences in unemployment rates in the new member states. Can unemployment in new member states be explained by the rigidity of their labour markets or are other factors behind high unemployment rates in some of them?

The Commission's advice is consistent with the general economic view, based on research with OECD countries, suggesting that labour market institutions determine the rigidity of a labour market (Nickell et al., 2003). Since flexible labour markets are better equipped to respond to changes in labour supply and demand, unemployment rates are lower in flexible labour markets. Unemployment in the new member states is perceived to be high. Combining this with their history of rigid labour markets, it is reasonable to expect that a similar relationship between rigid labour markets and poor labour market performance holds for the new member states as well. If so, a solution is easily found: the new member states with high unemployment rates need to reform their labour market institutions and unemployment will decline as a result.

The EU-15 countries are known to have more rigid labour markets than the US. Are labour markets in the new member states more rigid than those in the EU-15? After the transition to a market economy began in post-communist countries, the social security system has been revised drastically, labour market regulation has been moderated and all countries have moved away from the centralised bargaining system. After all these reforms, where do the new member states position themselves in the rigidity ranking now? And, if labour market institutions do not provide an answer, what does cause unemployment to be almost 20% in Poland and the Slovak Republic?

Section 2 gives an introduction about the ten new member states, addressing labour market performance in these countries. Section 3 outlines theoretical relationships between labour market institutions and unemployment. Section 4 describes labour market institutions in the new member states and discusses the rigidity of their labour markets. Section 5 empirically examines the impact of

* Sjef Ederveen and Laura Thissen are with CPB Netherlands Bureau for Economic Policy Analysis.

[1] In this report, the 15 countries that were already members of the European Union are referred to as EU-15, whereas the ten countries that joined on 1 May 2004 are referred to as 'new member states', 'acceding countries' or ACC-10.

labour market institutions on performance. Section 6 suggests other causes of unemployment and section 7 concludes.

2. New member states: An introduction

In May 2004, the European Union was joined by eight Central or Eastern European Countries (Poland, Hungary, the Czech Republic, the Slovak Republic, Slovenia and the Baltic states) and two southern European islands (Malta and Greek Cyprus). In 2007, Romania and Bulgaria will probably join. Even though most of the new member states share a history as centrally planned economies, large differences in unemployment have evolved over the past 15 years. Before focussing on labour market institutions, we first provide a concise overview on the social and the economic situation in these countries these days and the differences among them.

2.1 Population

The total population of the new member states equals one-fifth of the total population of the EU-15. This means that 16% of the total population of the enlarged Union lives in a Central or Eastern European country (see Figure 1). By far the largest country joining is Poland, with 38 million inhabitants. About 10 million Hungarians and 10 million Czechs will join (Table 1). GDP as a percentage of total GDP in the EU-25 is far from proportional to the amount the population takes up: only 5% of total GDP can be attributed to new member states.

Figure 1. Population as a percentage of the total population of the EU-25(2001)(left) and GDP as a percentage of total EU-15 GDP(2002) (right)

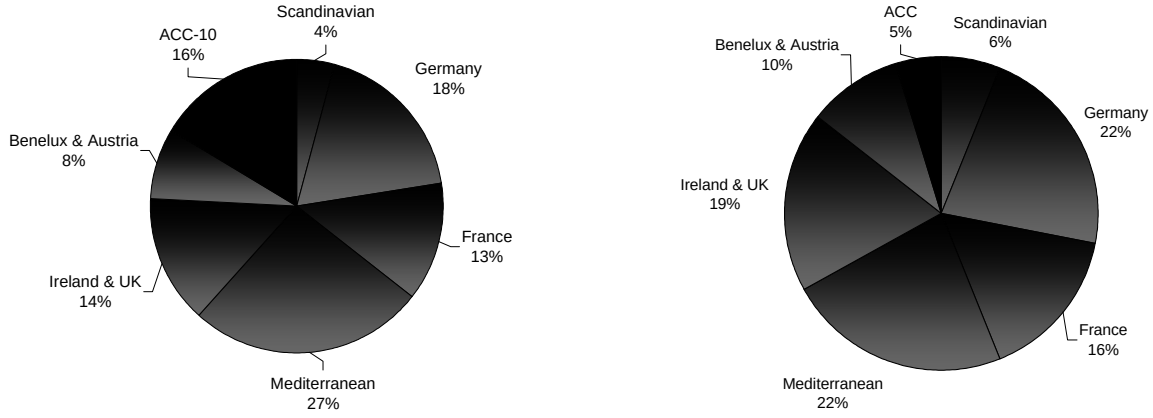


Table 1. Population in the new member states(2001), in millions

Poland	38.2	Lithuania	3.5
Hungary	10.2	Latvia	2.4
Czech Republic	10.2	Cyprus	0.8
Slovak Republic	5.4	Malta	0.4
Slovenia	2.0	Bulgaria	7.9
Estonia	1.4	Romania	21.9

Source: Eurostat.

2.2 Productivity and wages

At the beginning of the transition, labour markets in the acceding countries were characterised by full employment. Unemployment did not exist. Overstaffing and labour hoarding were common and gave rise to low productivity, and thus low wages. Figure 2 gives an overall impression of economic activity per person employed in 1995 and 2001, in relation to the EU-15 average. GDP is given in purchasing power parities. Although productivity has been rising between 1995 and 2001 in the acceding countries, the average GDP level in 2001 only reaches half the EU-15 average level. The US exceeds the EU-15 average level. It should be noted that GDP per person employed does not distinguish between full-time and part-time employment.[2] Since the number of people working part-time is higher in the EU-15 than in the new member states, the differences in GDP per hour worked will probably show an even larger gap between member states and acceding countries (see Box 1).[3]

Box 1. Transition to a market economy

Economically, the main goals for the post-communist countries were internal liberalisation (price reform, macroeconomic stabilisation and privatisation) and external liberalisation (removal of non-tariff barriers and the removal of state monopoly over foreign trade). The countries adopted different reform packages in order to transform their economies. Poland's 'big bang strategy', involving simultaneously removing price controls, selling state enterprises to private investors and reforming government finance towards Western models, was implemented rather smoothly. An advantage was the already existing private sector, consisting mainly of small private agricultural firms: just before the fall of Communism, one-third of the labour force was already employed in the private sector. One of the main problems still remaining is the need to restructure the large agricultural sector.

Hungary, on the other hand, took a more gradual approach since the country had already taken some price liberalisation measurements during the mid-1980s and continued to implement these, together with privatising large state-owned enterprises and reforming state finance. In the beginning of the 1990s, the Hungarian government was forced to stop the reforms because of the economic depression but it resumed the thread in 1995. The private sector is growing slowly and mainly through newly created firms rather than privatisation of state-owned companies.

Just after the fall of Communism, Czechoslovakia split up into the democratic Czech Republic and the Slovak Federal Republic. Both started immediately with price and trade liberalisation, and privatisation of state enterprises, selling or dividing state property among the population by vouchers during 1992-94. Slovakia experienced more difficulties than the Czech Republic in transforming itself into a market economy. The loss of Eastern markets hit Slovakia hard because of the structure of its industry. In the Czech Republic, the drastic privatisation increased the private sector from practically zero to an estimated three quarters of output in 1996. Nevertheless, the state still has a majority or holds a stake in a number of large enterprises and banks.

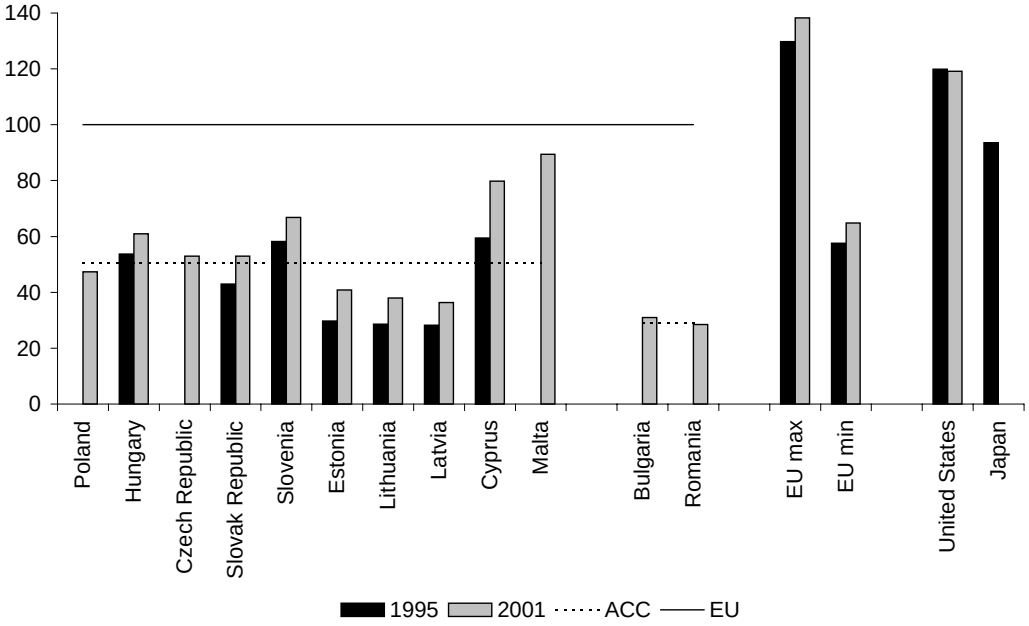
As the most prosperous part of former Yugoslavia, Slovenia already maintained economic relations with the EU. Moreover, the degree of centralisation was lower than elsewhere in Central Europe. At the end of the 1980s the economic drawbacks of the communist system became visible: high inflation, declining wages and increasing debt. Yet, there were restrictions on property rights and the use of capital, there was excessive emphasis on heavy industry, large companies played a dominant role and a substantial share of trade was directed towards communist countries.

Estonia was the first Baltic state to have a functioning market economy with a fully privatised public sector and a privatised foreign trade system. Latvia and Lithuania still have a rather large agricultural sector in need of restructuring.

[2] GDP per hour worked takes this difference into account but is only available for the Slovak and Czech Republics.

[3] In the EU-15, on average 13.8% of total employment is part-time. In Hungary, the Czech Republic and Slovakia this percentage ranges from 1.9 to 3.2%. Poland's part-time employment approaches the EU-15 average with 11.6% (OECD 2002b, data for 2000).

Figure 2. GDP in purchasing power parities (PPP) per person employed relative to EU-15 (EU-15=100)



Notes: EU max = Luxembourg for both years depicted; EU min = Portugal for both years depicted.

Sources: Eurostat; averages in figures are weighted on the basis of population (OECD, 2001) unless stated otherwise.

The former communist countries were left with low wages and low-wage differentials, partly as a result of the central way in which these wages were set. The key aspect of the stabilisation policies was the introduction of an income tax. The direct consequence of this tax, however, was a sharp fall in real (consumer) wages in 1993, equal to around 80% of their 1989 level in the Czech Republic and 71% in Poland. After 1993, real wages slowly recovered except in Bulgaria and Romania. In most countries, wages lagged behind productivity, though a slow recovery took place in the mid-1990s. Slovenia and Estonia were exceptions: in these countries, productivity lagged behind real wages during the 1990s (Nesporova, 2002).

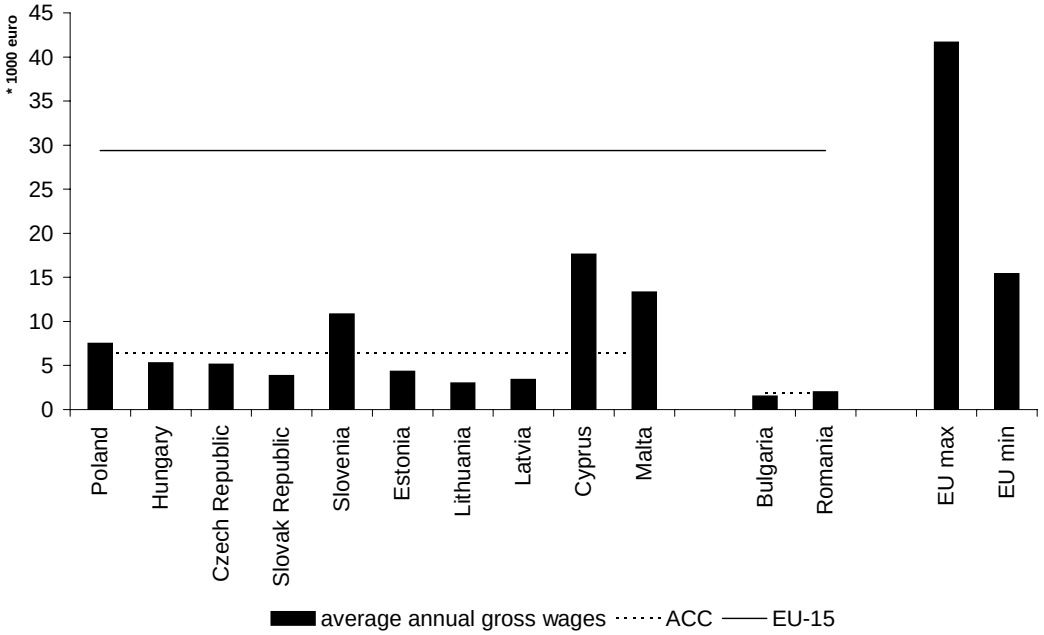
Wages differ per sector. In Poland for instance, wages in public enterprises have remained above those in private firms, except in education and financial services. Figure 3 gives an idea of the wages in industry and services[4] in euros per year. As we see in Figure later in the paper, 86% of employed people work in these sectors. The (gross) values given in the figure give an idea how low wages still are compared with wages in the EU-15. Yet the amounts are not given in purchasing power parities that would reduce the gap. As far as detailed data for 2000 are available, earnings are generally lowest in hotels and restaurants. Among the member states, Portugal has the lowest level (€8,555); of the acceding countries and Bulgaria scores lowest (€908 per year). By contrast, in most countries financial intermediation has the highest earnings, with the top figures among the member states being recorded in the UK (€57,646) and for the acceding countries in Malta (€22,032) (Eurostat, 2003).

To further illustrate the differences between EU-15 and ACC-10 wages, the average weighted minimum wage in the EU-15 is €962 per month, which would add up to €11,000 to €12,000 per year.

[4] Eurostat provided the data in Figures 3 and 6. Eurostat distinguishes three economic sectors: agriculture, industry, and services. Since the first of these sectors includes fishing, but not mining and quarrying, the three sectors here are called ‘agriculture, industry and services’ instead of ‘primary, secondary and tertiary sectors’ (Eurostat, 2002).

This is higher than the average annual wage in all new member states, except Cyprus and Malta. Differences in purchasing power are not, however, taken into account here.

Figure 3. Average annual wages in industry and services, 2001



Notes: No data are available for Ireland, Italy or Austria; EU-15 average is based on available data and taken from Eurostat (2001); the ACC-average is based on own calculations; Lithuania data are from 1999; EU max = Denmark; EU min = Greece.

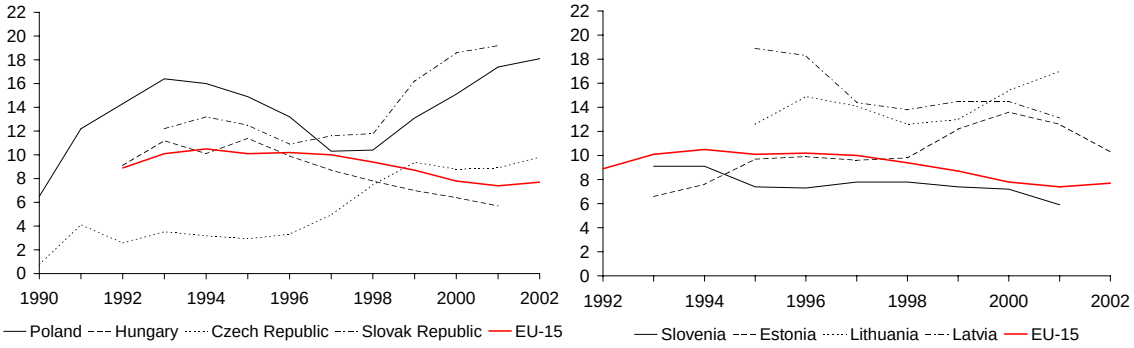
Source: Eurostat, 2003.

2.3 (Un)employment

When economies opened to world markets through the introduction of economic measures that also allowed rapid price liberalisation, combined with strict macroeconomic-stabilisation policies, the result was a steeper than expected decline in the economic performance of these countries. Domestic demand fell sharply, first for consumer goods and services and then for investment goods. Subsidies for enterprises were cut and productivity had to increase in order to compete with imported products. This led to a sharp increase in registered unemployment rates in the beginning of the 1990s. After converging, a second upward trend in Poland, Slovakia, Lithuania and Bulgaria, as well as in the Czech Republic and Estonia, began around 1998 (Figure 4). Since then, rates have diverged: the countries performing the worst (Poland, Slovak Republic, Lithuania and Bulgaria) expose further increasing rates while others show stable rates around 7%[5] (Nesporova, 2002). Whereas unemployment increased in Poland and the Slovak Republic, it decreased in Hungary and the Czech Republic.

[5] Particular groups were worse off, such as the elderly, almost-retired employees, young employees, members of ethnic minorities such as the Roma and women. Unemployment rates are still higher for women than for men, except in Hungary, Bulgaria and Romania.

Figure 4. Unemployment rates 1990-2002

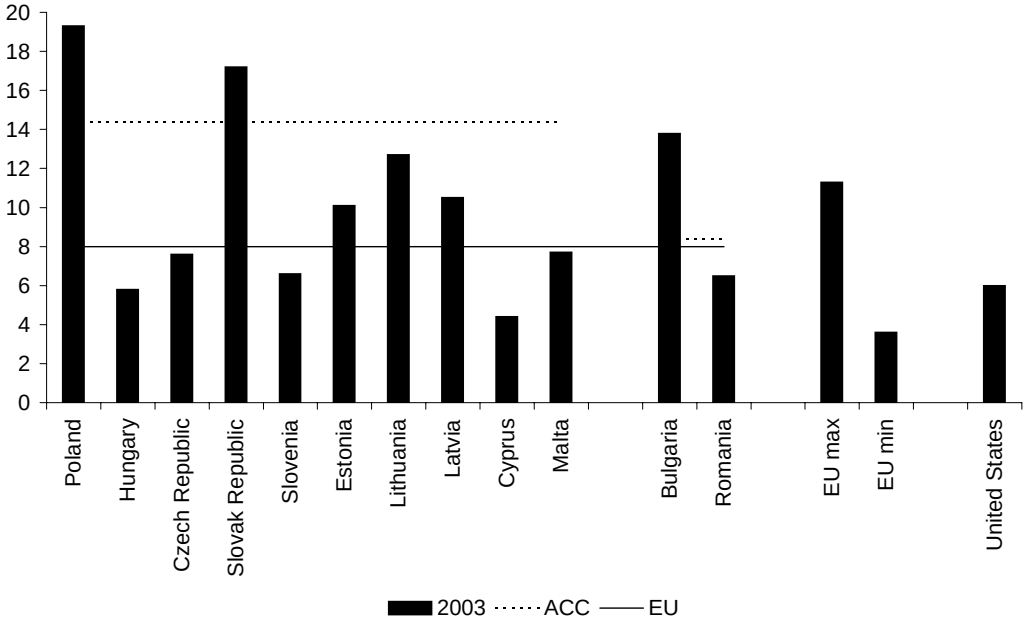


Note: Data for Poland are end-of-year figures.

Sources: Labour Force Survey, European Training Foundation, UNECE.

The average unemployment rate in ACC-10 in 2003 was higher than the average unemployment rate in the EU-15: 14.4% versus 8.0%, respectively (Figure 5a). According to recent research, 78% of the acceding countries' population lives in regions with unemployment rates in excess of 10%, whereas the corresponding figure in member states' regions is 34% (Gacs and Huber, 2003). The rate, however, is mainly high because of rising unemployment in Poland and the Slovak Republic in recent years. Leaving Poland and Slovakia aside, average unemployment drops below the EU-15 average, to 7.8%. In five out of ten countries, unemployment is below the EU-15 average.

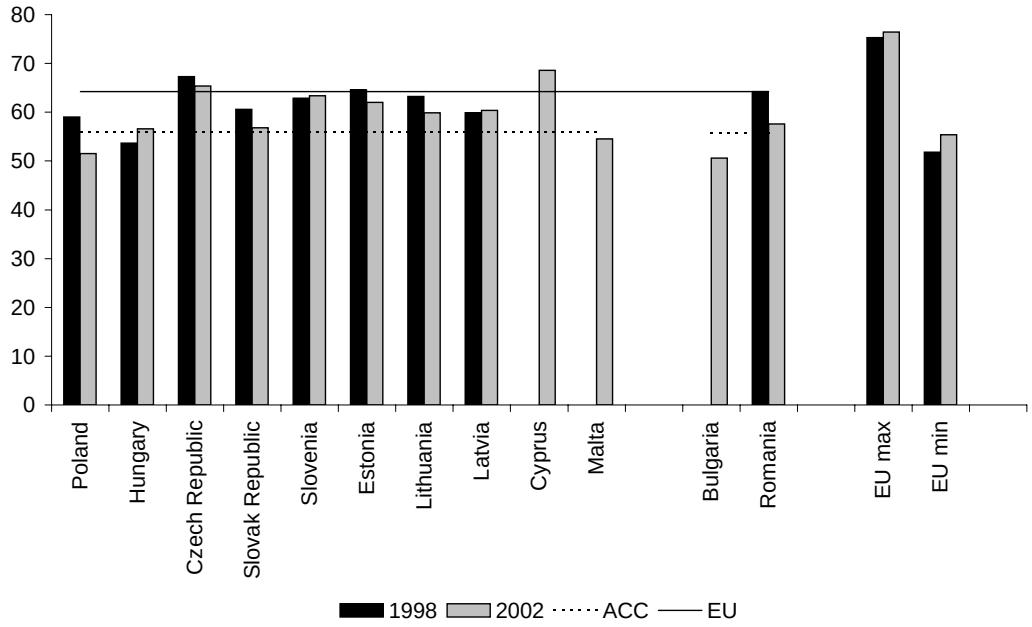
Figure 5a. Unemployment rates, 2003



Notes: EU max = Spain; EU min = Luxembourg. Unemployment rates represent unemployed persons as a percentage of the labour force. Unemployed persons comprise persons aged 15 to 74 who were: a) without work during the reference week; b) currently available for work, i.e. were available for paid employment or self-employment before the end of the two weeks following the reference week; and c) actively seeking work, (had taken specific steps in the four weeks period ending with the reference week to seek paid employment or self-employment) or who found a job to start later, i.e. within a period of at most three months.

Source: Eurostat.

Figure 5b. Employment rates, 1998 and 2002



Notes: EU max = Denmark; EU min = Italy. Averages are based on data for 2002. The employment rate is calculated by dividing the number of persons aged 15 to 64 in employment by the total population of the same age group. The survey covers the entire population living in private households and excludes those in collective households such as boarding houses, halls of residence and hospitals. The employed population consists of those persons who during the reference week did any work for pay or profit for at least one hour, or were not working but had jobs from which they were temporarily absent.

Source: Eurostat.

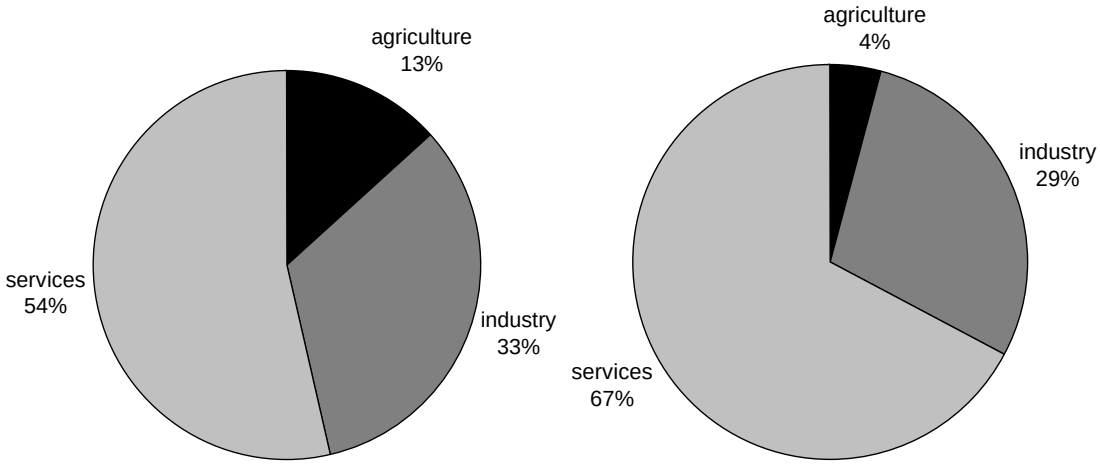
The changes in unemployment are not reflected by the same changes in employment, as becomes clear when comparing the graphs in Figure 5b. Employment in Poland is lowest of all countries, at a rate of 51.5%, implying half of the population is not employed. The failure of employment in Poland to increase during past periods of high growth, the concentration of unemployment among certain groups and persistently high, regional unemployment rates, point to the increasingly structural nature of unemployment in Poland (OECD, 2001). Hungary, the country with the lowest unemployment rate also has a low employment rate.

Loss of employment in the formal sector caused the informal sector to grow in the acceding countries, especially in the first years of transition. Economic recovery and progress in legislative reform in Central Europe have been accompanied by some reduction in informal sector activity. A reason for expansion in the informal sector is tax evasion, facilitated by legislative changes lagging behind economic developments and by poor law enforcement. A second factor is the large decline in incomes experienced by a major share of the population in connection with the transition crisis and rising unemployment (Nesporova, 2002). When employment in the informal sector is taken into account, unemployment rates are presumably lower than the registered rates.

Before transition, the defence, oil and gas extraction industries were the major providers of employment in the industrial sector, whereas the services sector was underdeveloped. Large state-owned enterprises dominated all sectors. The private sector was virtually non-existent or played a minor role, as was the case in Hungary and Bulgaria. Poland was the one exception: agriculture was based on small, private family farms (Nesporova, 1999). In 2001, services rather than industry was the dominant employment sector in the acceding countries, as was the case in the EU-15 (Figure 6). The agricultural sector is substantially larger in the acceding countries, mainly because of Poland. Were

Poland left out, the share of agriculture would decline to 8%. The large agricultural sector in need of restructuring bodes ill for future unemployment in Poland and the Baltic States Lithuania and Latvia.

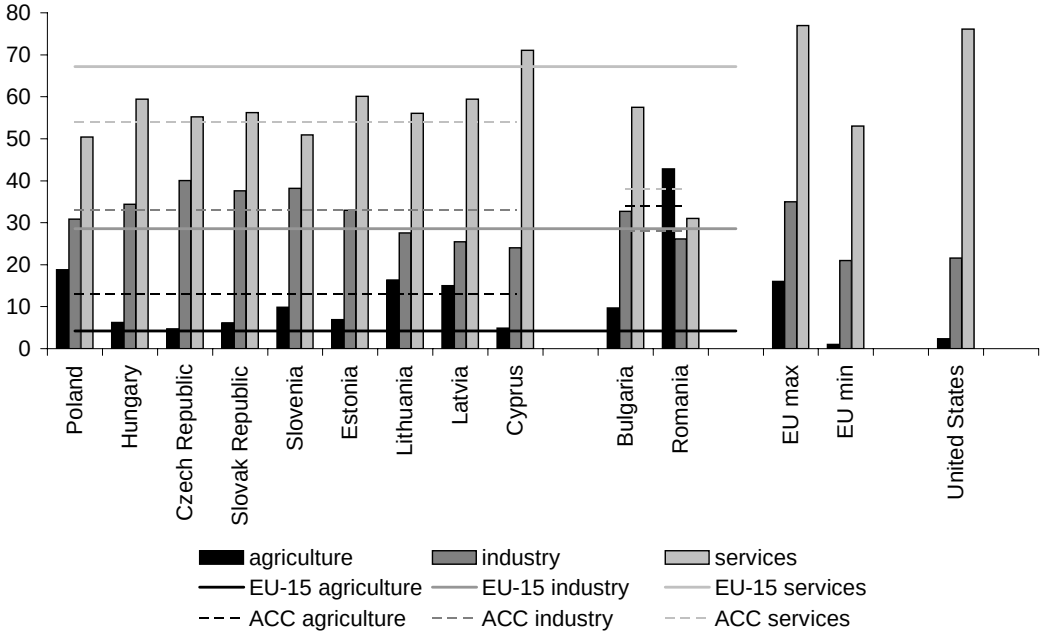
Figure 6. Employment by sector in acceding countries (left) and in EU member states (right), 2001



Notes: Percentages are weighted averages for 2001; no data are available for Malta; second-wave countries are not included.
Source: Eurostat (see footnote 4 for definitions of the sectors).

Figure 7 shows the shares per country. Indeed, the share of employment in agriculture is still large in Poland, Lithuania and Latvia, although it has been declining over the past ten years in all countries except in Romania. In Poland and the two Baltic States Lithuania and Latvia, one out of six employed people still work in the agricultural sector. In Romania, 43% of the labour force works in the agricultural sector.

Figure 7. Employment per sector (as a percentage of total employment), 2001



Notes: No data are available for Malta; EU max = Greece, Portugal & Luxembourg for agriculture, industry and services, respectively; EU min = the UK, Netherlands/Luxembourg and Portugal for agriculture, industry and services, respectively.

Source: UNECE.

2.4 Section conclusions

- In the EU-25, 16% of the population will be living in a Central or Eastern -European country, together producing only 5% of total GDP.
- Productivity in the ten new member states has been rising, but on average, it only reaches 50% of the EU-15 level in 2001. As a result, wages are low.
- Unemployment in the new member states converged to about 10% in 1996. Since 1998, rates have been diverging again: unemployment is high in Poland and the Slovak Republic, but lower than the EU-15 average in five out of ten new member states. Excluding Poland and the Slovak Republic, unemployment is 7.8% in the new member states, which is just below the average in the EU-15 (8.0%).
- Poland, Lithuania and Latvia have a high share of agriculture. Since this sector is in need of restructuring, this bodes ill for future unemployment. Employment in the industrial sector is higher and in the service sector it is lower.

In the following sections, we focus on the theoretical relationships between labour market institutions and labour market performance in the new member states.

3. Theoretical impact of labour market institutions on unemployment

Labour market institutions are often held responsible for poor European labour market performance. In this section, we describe the main mechanisms through which institutions can influence the working of the labour market. Further, we discuss empirical evidence and assess the effects of labour market institutions in the acceding countries.

A convenient starting point for thinking about the effects of labour market institutions on wages and unemployment is provided by a model of wage bargaining. In such a model, wages are bargained over by employers and employees. In the bargaining process, employers try to keep wages low to maximise their profits, whereas employees try to maximise their real net wage. Both sides have full knowledge with respect to the relevant labour market institutions and they use this in trying to obtain an optimal outcome from the bargaining process.

In this document, we will not derive a fully specified mathematical model relating labour market institutions to wages and unemployment. One reason for this is that there is no single best model and different models lead to different predictions. Another reason is that we don't want to loose the reader in a long mathematical exposition, whereas it suffices for our purpose to sketch the main mechanisms through which labour market institutions affect unemployment. To give some flavour of how these relations could formally be modelled, we briefly sketch the main features of the so-called 'right-to-manage' framework in the box. The interested reader is referred to Layard, Nickell and Jackman (1991) and Pissarides (1990), who describe a number of models that relate institutions to unemployment in more detail.

In the following section, we focus on the labour market institutions that are generally acknowledged to have important impacts on labour market performance. These are taxes and social security, the role of unions, active labour market policies (ALMP), employment protection legislation and minimum wages. In the following sections, we describe the main features of these institutions in the new member states of the European Union, compare these to the EU-15 and empirically link them to unemployment. Here, we restrict ourselves to the theoretical impact.

3.1 Social security

It almost goes without saying that higher unemployment benefits may increase unemployment. The reason is that higher benefits raise the fallback position of the worker, which is the expected income if negotiations break down. As a consequence, if the bargaining position of the employee improves,

wage demands will be higher and so will unemployment. In a model, as for example in the right-to-manage framework described in Box 2, this effect is explicitly taken into account in the specification of the reservation wage $\hat{W}$.

Box 2. Wage formation in the right-to-manage model

In the right-to-manage framework, wages are determined by negotiations between trade unions and employers' associations. The outcome of the negotiations can be described by the following Nash bargaining optimisation:

$$\underset{w}{Max}\,\Omega = \Pi^{\alpha} U^{1-\alpha}$$

where Π and U represent the interests of the employers' organisation and the trade unions respectively. The parameter α represents the relative bargaining power of the employers' organisation. In particular, if $\alpha = 1$, bargaining is completely dominated by the employers, whereas $\alpha = 0$ indicates complete domination by the union. Negotiating partners maximise the bargaining outcome with respect to the contractual wage rate W. Employment is determined unilaterally by the labour demand of employers.

The employer aims to maximise profits Π, i.e.

$$\Pi = PY - WL$$

where P and Y denote the price and the volume of value added and L stands for employment. According to this equation, lower wages are in the interest of firms since they increase profits.

The utility-function of the trade union reads as follows:

$$U = L^{\eta}\left[W(1-t_a) - \hat{W}\right]^{1-\eta}$$

Hence, trade unions care about both wage incomes and employment among their members. The parameter η represents the value that unions attach to employment, relative to wages. If $\eta = 1$, unions do not care about the wage level, whereas $\eta = 0$ indicates that they are only interested in the wage rate. In all other cases, trade unions face a dilemma between wages and employment. On the one hand, unions act in the best interest of its members and aim at setting wages high. On the other hand, they take into account that higher wages have a negative impact on the demand for labour by employers. The utility that trade unions derive from higher wages is defined relative to the so-called 'fallback' position for workers, or reservation wage $\hat{W}$. This reservation wage is the expected income for a worker in case the wage negotiations break down and the worker loses his or her job.

Optimising the Nash bargain with respect to the wage rate and the relationship between labour demand and wages, we arrive at the following expression for wages:

$$W = \frac{\chi_1 \hat{W}/(1-t_m) + \chi_2 PY/L}{\chi_1 \dfrac{1-t_a}{1-t_m} + \chi_2}$$

where $\chi_1 = \alpha+\eta(1-\alpha)/(1+\varepsilon^{-1})$; $\chi_2 = (1-\alpha)(1-\eta)$; ε the price elasticity of demand.

This expression shows that wages are determined as a weighted average of the reservation wage and labour productivity with the weights depending on the parameters of the bargaining process. It further reveals that real wages increase if the relative bargaining power of the trade unions increases (i.e. lower α) or if trade unions care more about wages relative to employment (i.e. lower η). Moreover, a higher replacement rate, i.e. an increase in unemployment benefits B relative to wages, raises wage demands through the reservation wage $\hat{W}$. Apart from these institutional parameters, real wages are negatively related to the unemployment rate according to the wage curve.

The importance of this effect is determined by the level of the benefits relative to the wage level. This ratio is measured by the replacement rate. So, according to the theory, the higher the replacement rate, the higher unemployment will be.

Another important feature of the social security system is the duration of unemployment benefits. The longer the duration of the eligibility for unemployment benefits, the stronger the effect of the replacement rate on unemployment will be. Empirical evidence suggests that long-term benefits generate long-term unemployment (see for example Nickell and Layard, 1999).

A third related aspect of the unemployment benefit is the strictness of eligibility. In the model in the Box 2, it is simply assumed that workers are eligible for benefits when they become unemployed. In practice, this is often not the case. We will come back to this when describing the institutions in the new member states. Available empirical research shows that the severity of the benefit system may be an important determinant of unemployment duration (see for example, Abbring et al., 1999 and the Danish Ministry of Finance, 1999).

3.2 Active labour market policy

Active labour market policy can take various forms. It involves both the creation of jobs for certain groups of unemployed people in the public sector and it includes wage-cost subsidies for specific forms of employment in the private sector. Regardless of the specific form, active labour market policy in itself will have a positive effect on employment. Yet, it has to be paid for as well. One also has to be careful in assessing the effects of job creation in the public sector, as it leads to a reduction in employment in the private sector because vacancies there become more difficult to fill. Dahlberg and Forslund (1999), for example, reach the conclusion for Sweden that the ultimate net employment effect of the active labour market policy is 35% of the number of jobs created. For the Netherlands, Jongen et al. (2003) find a net employment effect of between 31% and 48% of the number of jobs created in the public sector.

One way of modelling active labour market policies is by assuming that unemployed persons receive a subsidy when they find work and that taxes are raised by the same amount to pay for this subsidy. Receiving a subsidy is only one of the many programmes active labour market policies cover. The wide variety of programmes and the various effects that may be important are hard to model in one model. Some schemes have been modelled by Pissarides (1990) in the context of the matching process. Quite apart from their effect on matching efficiency, active labour market policies may affect the productivity of jobseekers. This is the aim of labour market training as well as of various work experience programmes. Calmfors et al. (2002) provide a summary of the theoretical discussion on the expected effects and draw some lessons from the Swedish experience.

3.3 Taxes

In addition to the social security benefits system, taxes also play a role in the redistribution of income. If taxes are progressive, then people with a high income will pay proportionately more tax than people with a low income. As a consequence, wage demands are moderated because they are less valuable, leading to lower unemployment. In the right-to-manage framework in Box 2, this effect can be seen through the way the marginal tax rate t_m and the average tax rate t_a enter the model. Nevertheless, a probably more important effect of fiscal progression is that it has negative consequences for labour supply. It reduces the incentives for people to work harder because free time becomes more attractive than consumption. Both the empirical work of Newell and Symons (1993) and the simulation results for the Netherlands (Graafland et al., 2001) conclude that higher progression in the end leads to less employment.

Next to the progressiveness of the system, the tax wedge itself is also an important determinant of wages and unemployment. Intuitively, a higher tax wedge raises the relative attractiveness of working in the informal sector. These activities are not taxed because they simply are not subject to taxation (such as household production), or because taxes are evaded (black market activities).

In the bargaining model, this implies a better fallback position, thereby strengthening the bargaining position of the union in the formal sector. Phelps (1994) and Pissarides (1998) model these effects formally. Furthermore, just as with progressive taxes, a higher tax wedge can discourage labour supply and result in less employment.

3.4 The role of unions

In a bargaining model, an important determinant of real wages (and unemployment) is the relative bargaining power of the employee or trade union relative to the employer (or employer's association). The bargaining position of trade unions depends first of all on the number of people that unions represent. The higher the union density, the better the relative bargaining position of the trade unions is.

The institutional level at which negotiations take place is another factor that influences the outcome of the bargaining process. We can distinguish between three levels of wage bargaining: firm or plant level (decentralised bargaining), industry level (bargaining at the intermediate level) and countrywide level (centralised bargaining). In many countries, informal networks and intensive contacts between social partners also coordinate the behaviour of trade unions and employers' associations. Examples are the leading role of a limited number of key wage settlements in Germany and the active role of powerful employer networks in Japan (Soskice, 1990). Therefore, not only does the formal degree of centralisation matter, but also the degree of informal consensus-seeking among bargaining partners. This is generally called the level of coordination. For highly centralised bargaining systems, the degree of coordination and centralisation are likely to coincide. More decentralised systems may, however, exhibit higher degrees of coordination than the formal level of centralisation suggests.

Different views exist on how these different levels of wage bargaining affect the labour market. First, the neo-liberal school argues that the more decentralised and the less coordinated the bargaining process, the less bargaining power trade unions can exert. Second, the corporatist school argues that centralised or coordinated bargaining results in the lowest real wage demands, because centralised wage-setters are more aware of the negative externalities associated with high wages. The third view combines both arguments into a hump-shaped relationship with the highest real wages at the intermediate industry level, while wage levels are lower at both the decentralised and the centralised level (Calmfors and Driffill, 1988). The arguments underlying the hump-shaped hypothesis are based on a closed economy. In an open economy, consumption prices are also affected by imports while producer prices are determined on international markets. It has therefore been argued that real wage levels are more or less independent of the bargaining structure in open economies (Danthine and Hunt, 1994).

3.5 Employment protection legislation

We now turn to the theoretical effects of job security regulations and laws concerning the use of fixed contracts. Strict dismissal protection makes it more difficult and more expensive for businesses to lay off staff. This reduces the number of dismissals and can thus lead to a fall in unemployment. Furthermore, it encourages employers and employees to invest in company-specific knowledge and skills. On the other hand, it also makes employers more cautious in taking on new staff, which makes it more difficult for the unemployed to find work. Lengthening the average duration of unemployment may exacerbate the depreciation of knowledge and skills on the part of jobseekers. Dismissal protection is therefore attractive for those who have a job, but unfavourable for jobseekers. This will tend to reduce short-term unemployment and raise long-term unemployment. The ultimate effect on total unemployment is, however, ambiguous (Mortensen and Pissarides, 1999).

There are different ways of including employment protection into a model of wage bargaining. An example is provided by Belot (2003), who models the effects of firing costs by assuming that in each period a certain proportion of the workers is fired and that firms incur a fixed cost per fired worker. She shows that fewer dismissals, associated with stricter employment protection, weaken the

bargaining position of the unions and therefore pull the wage down. Another possible extension allows for a severance pay. Suppose for instance that when firms want to fire one of their employees, they have to pay him or him a severance pay. Utility of employees improves with the transferred amount, but the firms' profits will accordingly be lower. If we assume that severance pay is higher when employment protection is stricter, we can conclude from the model that employment protection legislation has two opposite effects: on the one hand, wage demands will be higher, because the fallback position of employees improves as they earn a premium when they get fired. On the other hand, employers incur higher costs and therefore are not prepared to pay the same wage as when employment protection legislation is lacking. The model does not provide a decisive answer about the ultimate effect on real wages.

Empirical research into the effect of employment protection on the labour market also fails to reveal any uniform effects. Boeri and Jimeno-Serrano (2003) discuss eleven studies, only three of which report a significant negative impact on employment and two a significant positive impact on unemployment. Most of the studies reach insignificant or ambiguous conclusions. Employment protection does appear relevant for the dynamics of the labour market: according to virtually all available empirical studies it leads to fewer dismissals and lower recruitment. Although the level of unemployment does not appear to change significantly on balance, employment protection does lead to a significant increase in the length of unemployment and thus widens the gap between those in work and the unemployed.

3.6 Minimum wages

The theoretical effects of minimum wages on employment are well-established. According to standard economic theory, a minimum wage leads to a reduction in employment. Employers find it too expensive to continue employing low-skilled workers at a wage that is higher than their productivity. This may explain why unemployment among the low-skilled is higher than among skilled workers. Despite this theoretical prediction, empirical literature from the US suggests that the minimum wage has little effect on employment levels. Time-series analyses show that an increase in the minimum wage of 10% leads on average to a fall in employment among teenagers of 1-3%, i.e. a fall in total employment of between 0.1% and 0.3% (Brown et al., 1982). Cross-sectional studies show even smaller effects (Card and Krueger, 1995).

The fact that American empirical research finds that changing the minimum wage has virtually no effect on employment may be related to its low level there: even if the minimum wage were increased by several percentage points, it would still be low. The same applies to the UK – Dickens and Manning (2002) conclude that the impact of the minimum wage is limited because it has been set at a level such that only 6-7% of workers are directly affected. It may therefore be that the minimum wage has a greater effect in continental Europe. Empirical estimates for the Netherlands by van Opstal (1990) do indeed suggest greater employment effects in the 1980s. A study by Kertesi and Köllö (2003) discusses the effects of the recent increase of the minimum wage in Hungary in 2001 by no less than 57%. Their conclusions unambiguously point at a loss of employment opportunities. The effect was strongest in small firms. All in all, if minimum wages are set at such a level that a significant portion of the labour force is affected, they seem to lead to higher unemployment.

4. Rigidity of labour market institutions in the new EU member states

The combination of labour market institutions determines the rigidity of labour markets. The EU-15 countries are known to have more rigid labour markets than the US. This is thought to be a reason behind lower labour market performance. This section addresses labour market institutions in the new member states in order to give an indication of where they can be ranked in terms of rigidity. The first part of this section focuses on social security systems. The second part will address the process of wage-formation in the acceding countries during the last 15 years. The third part examines regulation of the labour market in terms of minimum wages and employment protection legislation.

4.1 Social security

This section will look more closely at the social security systems in the new member states, including:

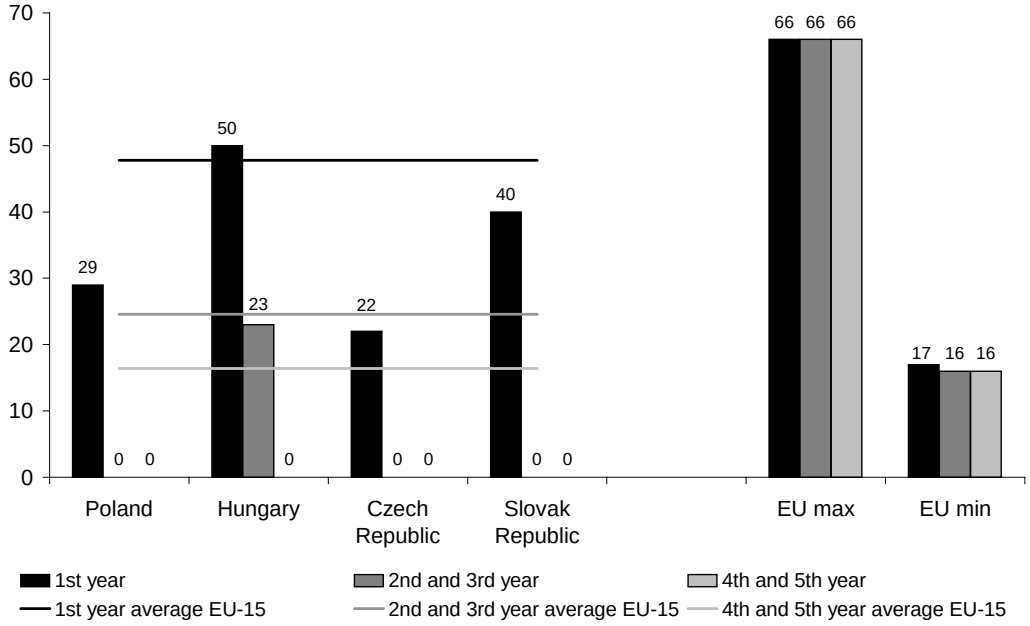
- level of replacement rates, eligibility for unemployment benefits and duration of the benefits;
- tax wedge; and
- expenditure on active labour market policies.

4.1.1 Replacement rates

At the outset of the transition there was no unemployment in the new member states. The emergence of high rates of unemployment was not generally regarded by policy-makers as a serious threat and most of the new Eastern European governments introduced fairly generous unemployment benefits (in terms of eligibility, levels and duration). In the beginning of the 1990s, however, unemployment rose sharply and so did the claims on benefits. Many countries reacted after 1991 by making eligibility rules more restrictive, shortening the duration of entitlement and cutting unemployment benefits (Scarpetta and Reutersward, 1994). Replacement rates give an indication of the level of benefits the unemployed person receives relative to average wages of the employed. Obviously, the tightening of the unemployment benefit system at the start of the 1990s resulted in declining replacement rates.

The OECD provides gross replacement rates for the earnings level of an average production worker (APW). These data are currently only available for Poland, Hungary, the Czech Republic and Slovakia. Figure 8. gives the replacement rate for the first five years of unemployment. Whereas the replacement rates in the first year of unemployment are comparable to those in EU members such as Ireland and Greece, in the years that follow replacement rates in the new member states drop drastically: only in Hungary do the unemployed receive benefits after being unemployed for more than one year. In comparison, replacement rates in the EU-15 are 25% in the second to third year and 16% in the fourth to fifth year of unemployment. The replacement rates reach a maximum of 50% in the first year and an overall average of 4% over five years and four countries. These levels make it rather unlikely that unemployment benefits per se would discourage benefit recipients from taking up a job.

Figure 8. Gross replacement rates for APW over a five-year period, 1999



Notes: Averaged over OECD family categories: single, with dependent spouse or with spouse in work; replacement rates are average unemployment benefits as a percentage of the average production worker wage level. EU max = Denmark; EU min = the UK.

Source: OECD database on unemployment benefit entitlements and gross replacement rates (OECD, 2002a).

The increase in unemployment did not only give rise to a decline in replacement rates, eligibility for unemployment benefits became stricter and the period of time for receiving benefits was reduced. In Table 4.1, features of the unemployment benefit systems are summarised.

In most new member states, people registered as being unemployed receive an unemployment benefit if they have worked from up to 12 months. In Bulgaria, Latvia and Cyprus these periods are shorter; in Slovakia and Lithuania people are required to have an employment history dating back at least 24 months. More recent laws tend to require longer periods of previous employment (avoiding claims after seasonal employment for instance). This is longer than in the EU-15: in Greece and the Netherlands, only half a year suffices; in Spain benefit conditions only require 12 months of employment over six years.

Table 2. Main characteristics of the unemployment benefit system

	Replacement rate average benefit as % of APW, 1st year	Eligibility/required employment history	Benefit as % of previous earning for a single person	Duration of benefit
	%	*months*	*%*	*months*
Poland	29	12 in 18	no relation (work history)	6-18 (living area)
Hungary	50	12 in 48	65	3-12 (work history)
Czech Republic	22	12 in 36	50% first 3 months, 40% next 3 months	6
Slovak Republic	40	24 in 36	50% first 3 months, 45% thereafter	6-9 (contribution length)
Slovenia	-	12 in 18	70% first 3 months, 60% thereafter	3-24 (contribution length, age)
Estonia	-	12 in 24	no relation	6-12 (contribution length)
Latvia	-	9 in 12	50-65% 1-3 months, 30-49% (3-9)	9
Lithuania	-	24 in 36	no relation (reason job loss, insurance)	6
Cyprus	-	6	60%	-
Malta	-	-	no relation (work history)	
Bulgaria	-	9 in last 15	60%	4-12 (work history)
Romania	-	12 in last 24	50-55% (contribution length)	6 (work history)
Denmark	73	12 in 36	90%	60
The Netherlands	89	6 in 9 (flat rate) 48 in 60	no relation (70%MW) 70%	6 6-60
Germany	70	12 in 36	60%	12
Greece	44	about 6 in 14	40%	12
United Kingdom	49	24	no relation	6

Sources: column 1: OECD (1999); column 2: Burger (OECD, 2002a for CZ and PL; IMF, 2001 for LV; European Commission, 2001a-b, 2002a-b, 2003a for BG, CY, EE, LT and RO; GVG, 2003 for EE, HU, MT and SK; Min. of Labour for SI); column 3: Burger (ibid); UNECE (2003) for LT and RO; column 4: Burger (ibid) and UNECE (2003) (ISSA); Cazes (2002) for HU; data for member states: OECD (2002); columns 2 and 3 of the Netherlands: www.socialezekerheid.nl.

The initial benefit is about half of previous earnings. This rate remains fixed in some countries and gradually declines in others. In Poland, Lithuania and Malta there is no relationship between the amount received and previous earnings. In Poland and Malta, however, the length of the employment history determines the height of the (flat) rate.

In Hungary, Slovenia, Slovakia, Estonia, Bulgaria and Romania, duration depends on the length of employment history or the period during which contributions to the unemployment benefit fund were made (or both). Other factors can be age (Slovenia), reason for job loss (Lithuania) or unemployment rate in the area in which the claimant lives (Poland). People with a limited employment record receive benefits for only three to four months in Hungary, Slovenia and Bulgaria.

The payment rate (column 3) can be up to 90% within the EU-15 (Denmark and Finland), but the lowest rates (40% in Greece and 60-65% in France & Portugal) are comparable to rates in new EU member states. Liberal countries have flat rates. Duration is clearly longer in the EU-15: Belgium has unlimited duration, while in Italy and the UK unemployment benefits are granted for six months. Again, we see major variations within both categories of countries. Benefit systems in Greece and Portugal (not shown), but also in Germany and the UK, resemble those in the acceding countries most.

Elderly people who lose their job are eligible for early-retirement schemes in most acceding countries, depending on age, employment history and reason for job loss. Poland introduced this possibility by law in 1981, a year in which the Polish economy suffered a major decline. Since the mid-1960s, disability pensions had been the main form of retiring before reaching the pensionable age. Early retirement became the main instrument to ward off unemployment among employees with long work records, for instance in state enterprises (Golinowska, 1993). The level of payment is higher than unemployment benefit: 120 to 160% of the basic benefit. By mid-2000, 12% of the registered unemployed received early-retirement payments (European Commission, 2001d). The Slovak Republic and Malta have no early retirement system. In some countries, such as the Czech Republic, disability benefits provide a more generous alternative than social allowances, particularly for older workers, and are therefore used as an alternative to early retirement, as in Malta (Burger, 2003).

Table 3. Unemployment rate and the share of unemployed receiving benefits

2002, Q2	Unemployment rate	Share of unemployed receiving benefits
Poland	17.4	19.0
Hungary	8.1	33.5
Czech Republic	8.7	33.8
Slovakia	17.6	17.1
Slovenia	11.3	24.3
Estonia	7.0	49.6
Lithuania	10.7	10.7
Latvia	7.9	44.3
Bulgaria	17.2	20.2
Romania	9.6	23.3

Source: UNECE (2002, Q2).

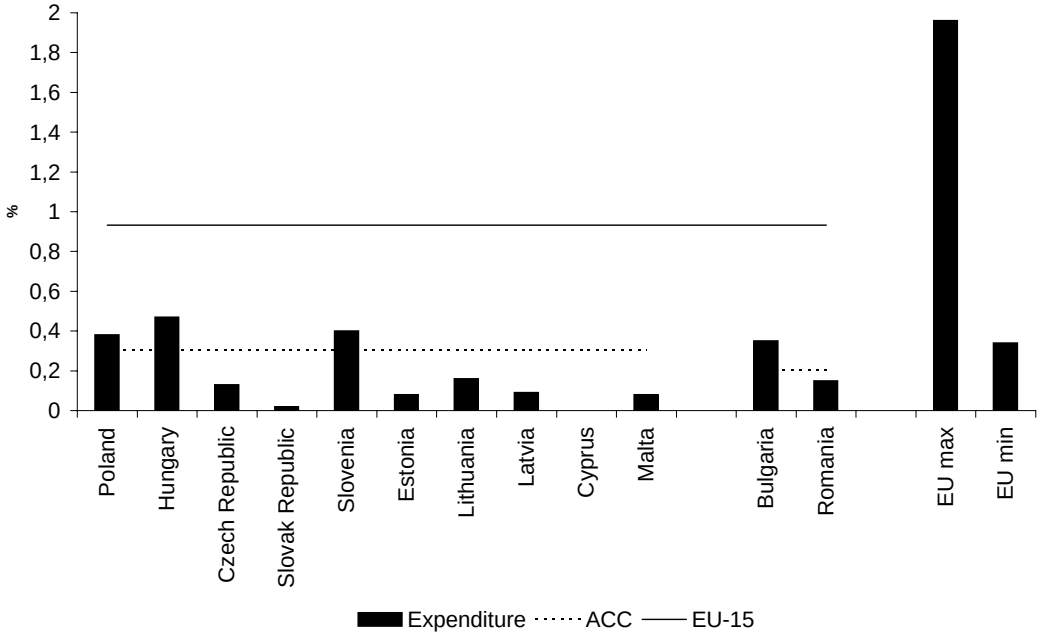
On average, eligibility is stricter (the employment history must be longer), duration is shorter and replacement rates are lower in the new member states. Strict eligibility and short duration led to high percentages of unemployed not entitled to unemployment benefits (Table 3). Comparing the second and third column in Table 3 (unemployment rate and the share of those receiving benefits, respectively), an interesting observation can be made: countries with high unemployment levels (Poland, Slovakia and Bulgaria) have low coverage compared with countries where unemployment is lower (Hungary, Czech Republic, Estonia and Latvia) (UNECE, 2003). The share of unemployed receiving benefits is low: about half of total unemployment lasts longer than 12 months, which would give a share of about 50% of unemployed receiving benefits. Conditions concerning the length of previous employment are stricter in Poland and the Slovak Republic than in Hungary and the Czech

Republic, which could account for a lower share of those receiving benefits. Multiplying both columns results in values around 3% (except in Lithuania), indicating that an equal percentage of the labour force receives unemployment benefit in each country. Note that, as for other social security benefits, means-tested social assistance schemes exist in all acceding countries.[6]

4.1.2 Active labour market policy

Along with passive labour market policies (unemployment benefits, social assistance), governments can also choose to adopt a package of active labour market policies. These include for instance, temporary job programmes (especially practised in the public sector in Poland, Czech Republic, Slovenia, Latvia, Lithuania and Bulgaria), recruitment subsidies (popular in Poland, Hungary, Slovenia, Latvia and Bulgaria) and (re)training. (Re)training is adopted in most countries (but hardly at all in Bulgaria and the Slovak Republic). As in the EU-15, a shift from passive to active labour market policies can be observed during recent years. Nevertheless, expenditure on active labour market policies is still rather low compared with what is spent by the EU-15. Only Hungary exceeds the level of spending in Greece, the EU-member spending the least (Figure 9).

Figure 9. Expenditure on active labour market policies as a percentage of GDP, 2000



Notes: EU max = SE; EU min = GR; SL: 1998; EE and MT: 1999; BG and RO: 2001.

Sources: OECD (1998) for EU & CZ, PL and SR; others: European Commission, 2001a-d, 2002a-b and 2003a.

As for effectiveness, it has been found that active labour market policies reduce the length of unemployment in the Czech Republic. In Poland it was found that the employment rate for people who had had training was higher. In Latvia, the number of people finding a job after participating in a programme rose from 25% in 1997 to over 50% in 2000. Temporary job schemes in Bulgaria on the other hand seemed to function more as income support than as activation measures (EBRD, 2000).

[6] Besides cash payments, social assistance can be composed of health insurance and free access to social services (Poland, Lithuania) or a heating allowance in winter (Romania, Lithuania). Beneficiaries are mainly persons who are no longer entitled to unemployment benefits or were never eligible (for instance because of the lack of an employment history or voluntary leave). Where the amount of unemployment benefit is lower than the subsistence minimum, as can be the case in Slovakia and Estonia where the benefit is calculated on a household basis, an individual is entitled to seek social assistance.

Even though reported results point to the positive effects of active labour market policies on employment, spending on such programmes is low. Increasing spending may enable a faster return of unemployed persons to the labour market. Shorter unemployment duration by guided re-entering of the unemployed into the labour market will affect labour-market dynamics positively.

4.1.3 Tax wedge

Part of employees' motivation to work comes from the consumption they can finance out of the income they earn. Income taxes and the employees' social security contributions reduce the return from working and therefore influence the decision to (re-)enter the labour market or choose leisure or unpaid employment (e.g. childcare). Payroll taxes, such as employer's social security contributions, raise the costs of employing labour over the wage paid. Higher wages increase unemployment (OECD, 1994).

Table 4. Tax wedge, 1999

Poland	42.9
Hungary	52.6
Czech Republic	43.0
Slovak Republic	42.0
Slovenia	41.0
Estonia	40.0
Lithuania	39.7
Latvia	41.7
Cyprus	16.5
Malta	16.4
EU min (Ireland)	25.8
EU max (Belgium)	55.6
EU-15 weighted average	43.2

*Source*s: OECD (PL, HU, CZ, SK and BE, and IRE), Eurostat (other countries, for low-earners); tax wedge is the employees' and employers' social security contributions and personal income tax, less transfer payments as a percentage of gross labour costs.

Table 4 shows the tax wedge, defined as employees' and employers' social security contributions and personal income tax, less the transfer payments as a percentage of gross labour costs. Although high taxes on labour are often perceived as one of the causes of high unemployment in, for instance Poland (European Commission, 2004), the wedge in the new member states is not higher than the average wedge in the EU-15. Hungary is the only country with a tax wedge above the EU-15 average. The high tax wedge in Hungary could form an obstacle for entrants to the labour market. This may be an explanation for the low employment rate in this country. A high tax wedge makes working in the informal sector more attractive. Moreover, high taxes on labour can be detrimental to job creation.

4.2 Wage formation

As discussed in the previous section, wage-bargaining structures affect employment. In addition to the level at which bargaining takes place, three other factors influencing bargaining power are discussed in the following paragraphs: union density, coverage and coordination.

4.2.1 Unions: Density, coverage and coordination

In most EU-15 countries, unions still play a major role in the process of wage bargaining. Union density may be low in some countries (Germany, France and Spain), union coverage (i.e. the number of workers, unionised or not, who have their pay and working conditions determined by collective

agreements in the enterprise sector) remains high. Collective agreements cover over 70% of the labour force in all countries except the UK and reach well over 90% in some countries (Finland, Germany, France and Austria). The UK is also the country with the lowest level of coordination, whereas in other countries informal consensus-seeking among bargaining partners is quite common. In Germany, the wage rate is set in one industry before bargaining officially starts and this rate is usually followed by other sectors.

A high level of coordination is likely to coincide with highly centralised bargaining systems, whereas decentralised systems may exhibit higher degrees of coordination than expected. The latter can be observed within the EU-15: during the past few years, a decentralising trend towards bargaining at the industry level has taken place, while coordination remains on a high level and has even been increasing (except in Sweden and the UK).

The new member states present a more homogeneous picture of unionisation, centralisation and coordination (Table 5). In these countries density has also declined, but more importantly for bargaining power, union coverage is about the same as in the EU-15. In Slovenia, membership of the bargaining organisation is compulsory, implying complete coverage (European Commission, 2003b). Significant differences have emerged between the public and the private sectors, with much lower unionisation of workers in the latter. Workers in medium-sized and small firms are rarely unionised (Nesporova, 2002). Although coverage is about as high as in the EU-15, bargaining power of the union depends heavily on coordination ability (informal consultation between unions and employers' organisation and/or at the inter-industrial level), which is now actually rather low in most of the acceding countries. In Estonia, the level of coordination between employers is very low: only one (voluntary) employers' association exists, covering 200,000 out of 640,000 employees. Declining bargaining power can also be low owing to other factors – in Poland the existence of many small unions erodes the union's power: next to two large unions, about 300 nationwide unions and 24,000 local unions exist (World Bank, 2002b).

Table 5. Union bargaining power: Density, coverage and coordination

	Density	Coverage	Coordination
Poland	34	70-100	1.5
Hungary	60	70-100	1.5
Czech Republic	43	26-69	1
Slovak Republic	62	70-100	2
Slovenia	60	70-100	3
Estonia	36	26-69	1.5
Sweden[7]	91	89	2
Germany	26	92	3
France	10	95	2
Italy	39	82	3
United Kingdom	34	47	1
United States	16	18	-

Notes: Coordination is given in indices ranging from 1 (low coordination) to 3 (high coordination).

Sources: EU member states – OECD (1997, 1994); new member states – Cazes (2002) and Riboud (2002), late 1990s.

[7] Until 1995, a national law required compulsory membership of a trade union in Sweden.

4.2.2 Collective wage bargaining

Before the transition commenced, the state controlled the wage bargaining process. Most people were employed by large state-owned industrial companies. Wages did not reflect productivity or performance. After transition, all Central and Eastern European countries started to move away from the centralised bargaining system and efforts were made to develop a collective bargaining system at the firm level. In practice, although basic guidelines are sometimes established through tripartite negotiations with the government, most wage bargaining takes place at the industry or the firm level, and in the private sector employers set wages. Next to collective bargaining focussing on guidelines for working conditions (Poland, the Slovak Republic and Estonia), the government does play a major role in setting minimum wages in some countries. In Poland, unions can exert influence on wage policy in the public sector.

Slovenia and Hungary are the main exceptions as far as centralisation is concerned. In Hungary, centralised collective bargaining has never been important. Wage deregulation had already begun before transition and during the privatisation period most private sector wages became freely negotiable at the industry and firm level. Some form of collective bargaining is still binding (only in the public sector), which is regulated through a strict wage-tariff system. In Slovenia, bargaining does take place on the centralised level. Consultations occur first at the national level, resulting in a collective agreement for the private sector that establishes base wages and adjustment factors for 26 industries and 9 education levels and a collective agreement for the non-market sector. Both agreements constitute the basis for all other contracts, therefore limiting wage variation across industries and firms. Multi-level bargaining takes place only in Slovenia and to a lesser extent in Hungary and Latvia (European Commission, 2003b).

Overall, two developments can be observed: a widening gap between sectors and a widening gap between state-owned and private (mostly small) firms. Unions mostly exert influence in large, not yet privatised firms. Workers in new firms in the expanding service sector on the other hand are rarely represented by a union. The emergence of small private firms (outside agriculture, 90% of newly created firms in Poland have less than 5 employees) weakens trade union power in Poland. Collective agreements can be adopted only when a union is present. Therefore, wages in the private sector tend to be lower than those in the public sector, although foreign firms form an exception to this rule (World Bank, 2002b). Although coverage is high, coordination still lags behind in the new member states, resulting in lower bargaining power than in the EU-15.

4.3 Labour market regulation

Collective centralised bargaining results in the setting of a minimum wage and working conditions in some acceding countries. The minimum wage is one of the regulations the government can enforce in order to ensure a minimum standard of living. Furthermore, the government can regulate the labour market by enforcing laws regarding protection of employees' health and safety in their working environment and protection against sudden dismissal. This section will look into:

- the level of the minimum wage; and
- the degree of employment protection in the acceding countries.

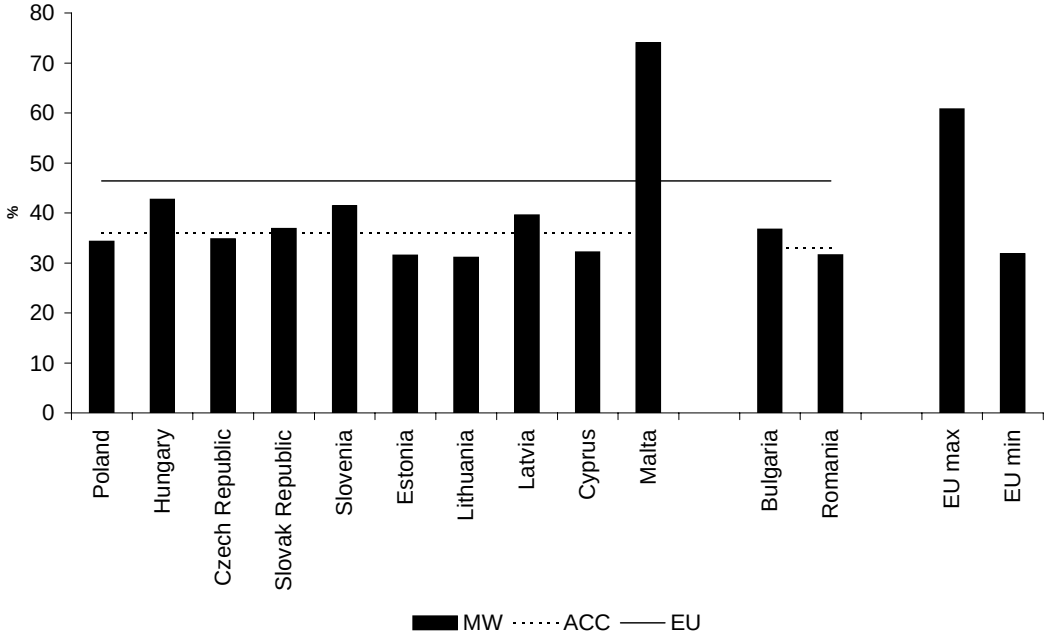
4.3.1 Minimum wage

The level of the minimum wage relative to the average wage and unemployment benefit determines its effect on (un)employment. If the minimum wage and the unemployment benefit are very low compared with average wage levels, its effect on unemployment is expected to be small. A recent paper on Hungary's policy of doubling the minimum wage between 2001 and 2002 finds that employment was reduced in the small-firm sector (Kertesi & Köllö, 2003).

Figure 10. provides an overview of the level of minimum wages in the new member states relative to the average-wage level. All countries have a legally binding minimum wage, although in Cyprus it is

only for specific professions.[8] The variation in ratios of minimum to average wage is about the same in the EU-15 and the ACC-10: Malta has the highest ratio, even by far exceeding the EU-15 country with the highest ratio, France. The minimum wage was introduced at the start of the transition at ratios to average wage that are similar to those in the member states of the EU (45-50%). Slovenia only introduced a minimum wage in 1995. As nominal wages remained unchanged in spite of inflation, the ratios fell. Until the mid-1990s, the increase in real wages remained below the growth of productivity, except in Slovenia and Estonia, where real-wage growth had outpaced productivity growth in the beginning of the decade. The level of minimum wages has been adjusted numerously in many countries during the 1990s: Poland increased its minimum wage significantly in 1993, Hungary doubled it and

Figure 10. Minimum wage as percentage of average wage, 2002



Notes: EU max = France; EU min = Spain. Romania more than tripled it in the beginning of this century. Still, the number of people receiving the minimum wage is low in most countries: 3-5%. This could be related to the low level of the minimum wage, in most countries, well below the subsistence minimum (Nesporova, 2002). It is therefore unlikely that the minimum wage has a negative effect on unemployment in these countries.

Sources: UNECE, 2002; CY: Ministry of Labour and Social Insurance (minimum wage only valid for clerks, salespersons, nurses, school-assistants, kindergarten attendants, no minimum wage for other occupations); MT: JAP, 2001 (relative to average net wages).

Malta forms an exception: the gap between the minimum wage and unemployment benefit is relatively small – €8 per week for a household with three children. This is one of the elements of the social security system Malta aims to reform.

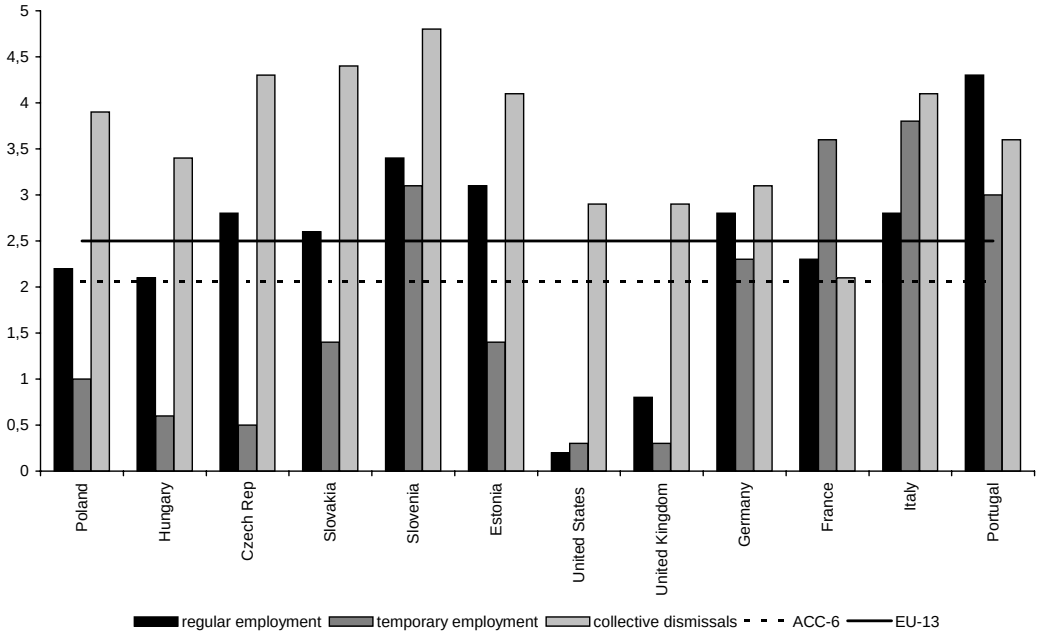
4.3.2 Employment protection legislation (EPL)

Before transition, employees in the centrally planned economies of the acceding countries enjoyed a fairly high degree of employment protection. Over the 1990s, the need for rapid structural adjustment of the transition economies after the introduction of economic and social reforms resulted in substantial moderation of EPL, partly enabled by weakening of trade union power. The objective was to facilitate workforce adjustment for firms in order to make enterprises more flexible and

[8] In Cyprus, only clerks, salespersons, nurses, and school and kindergarten staff are entitled to a minimum wage.

competitive. During the 1990s, legislation on employment protection has been revised several times, resulting in re-tightening of employment protection in some countries and its further moderation in others (Cazes, 2002).

Figure 11. Strictness of employment protection legislation on a scale of 0-6 (6 = the most strict), late 1990s



Notes: Employment protection legislation is given for three categories: legislation concerning regular employment, temporary employment and collective dismissals. The averages are taken from an index averaging the three categories.

Sources: World Bank (2002a) and Riboud (2002).

Figure 11 shows employment protection legislation concerning regular employment, temporary employment and collective dismissals. It turns out collective dismissals in particular are difficult to achieve in the new member states. With respect to regular employment, Hungary and Poland enforce the least strict laws. In Hungary, a written statement to the employee suffices for dismissal. In both countries, job redundancy or unsatisfactory performance suffices for dismissal, the notice period is short and the severance pay is small. The Czech Republic and Hungary have the least employment protection regarding temporary employment (renewal and maximum duration of contract). Hungary does have high employment protection where collective dismissals are concerned; in Slovenia employees are least protected when large groups of people are fired at the same time (Riboud et al., 2002; Nesporova and Cazes, 2003).

Labour markets known to be flexible (the UK, the US and Ireland) have less strict employment protection than the new member states.[9] Southern European countries have the most strict employment protection laws, protecting their employees at about the same level as in Slovenia, the country scoring highest among the new member states shown. Denmark, Switzerland and the UK have the least strict legislation on employment protection. Hungary has least restrictive laws of the acceding member states, but these are still considerably stricter than in the US.

[9] Boeri (2002) suggests that employment protection is an alternative form of insurance against labour market risks. He shows a trade-off between employment protection (particularly relevant in Mediterranean countries) and social security (mainly relevant in corporatist and social-democratic countries).

4.4 Section conclusions

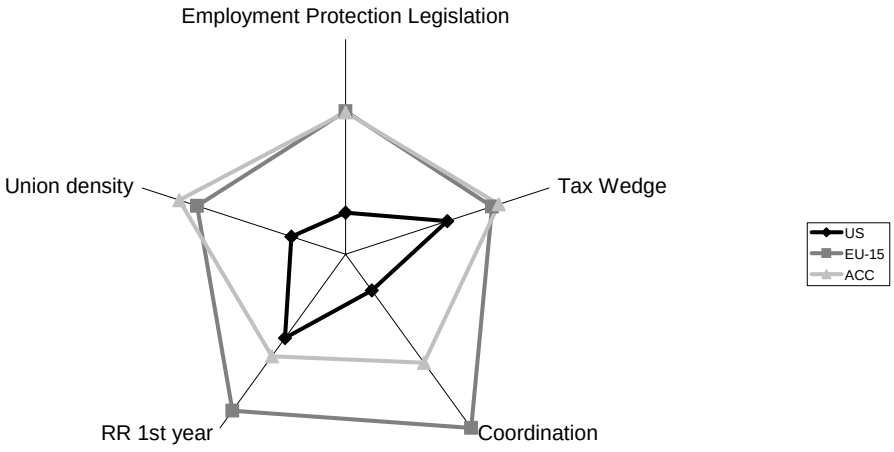
Labour markets in the new member states seem to be less rigid than in the EU-15, given that:

- Replacement rates are lower and duration is shorter – after one year of unemployment no unemployment benefit is issued anymore in most countries.
- In the wage-setting process, coordination is lower in the new member states; in general, bargaining takes place at the firm level.
- Employment protection legislation is less strict – only collective dismissal legislation is stricter in the new member states than in most EU-15 countries.
- Minimum wages as a percentage of average wages are lower in the new member states.

Only expenditure on active labour market policies is considerably lower than in the EU-15. The tax wedge is high only in Hungary, but about the same in the other three countries.

Figure 12, representing the rigidity of labour markets in the new member states compared with the EU-15 labour markets and the US labour market, confirms our analysis.

Figure 12. Flexibility of labour markets



Notes: RR 1st year = replacement rate in the first year of receiving unemployment benefit; ACC represents non-weighted averages over the six major new member states; for tax wedge and RR, only the four largest new member states are included.

Source: Authors' illustrations based on this section.

In short, labour market institutions in the new member states on average do not differ that much anymore from the institutions in the EU-15. If anything, they should be considered more flexible. Thus, labour market institutions imply less rigid labour markets in new member states than in the EU-15. This suggests that labour market performance should not lag behind in the new member states.

The next section empirically examines the effects of labour market institutions on unemployment.

5. The quantitative effect of labour market institutions on unemployment

Quantifying the relationship between unemployment and labour market institutions has been the topic of several studies. In their overview Nickell and Layard (1999) conclude that the main institutions influencing unemployment are unions and social security systems.

To reduce unemployment, governments should encourage product/market competition to eliminate the negative effect of unions, and link reforms of unemployment benefit systems to active labour market policies in order to move people from welfare to work. The following overview is based on a number of cross-country studies that we discuss in more detail below.

5.1 Overview of existing studies

Econometric analyses of the impact of institutions can be divided into two different types. First, there are studies that focus on 'shocks' and their interaction with institutions, which are assumed to be constant over time. The best example of this line of work is probably Blanchard and Wolfers (2000). On the basis of a panel of institutions and shocks for 20 OECD nations since 1960, they conclude that the interaction between shocks and institutions is crucial to explaining both the rise in European unemployment and the differences among countries. The shocks they consider consist of TFP growth, the real interest rate, the change in inflation and shifts in labour demand. These variables drive unemployment, so that, for example, the fact that annual TFP growth was considerably higher in the 1960s than in the 1990s in most countries is an important reason why unemployment was typically higher in the latter period. The effects of the labour market institutions that they estimate confirm the theoretical predictions described in section 3: the effect of an adverse shock on unemployment is increased by higher replacement rates, longer benefit duration, a higher tax wedge, less ALMP, more union density and coverage, and less coordination. Also, more employment protection is found to strengthen the effect of adverse shocks. The basic Blanchard and Wolfers model is extended in a number of papers, e.g. Bertola et al. (2001) and Lopez-Garcia (2003).

A second type of econometric study relies on changing institutions to explain unemployment patterns. Here, a subdivision can be made of studies that use averages over institutions for different periods to explain the long-term unemployment trends and studies that use annual data to explain actual unemployment. A good example of the latter is provided by Nickell et al. (2003). They include shocks in money supply, labour demand, total factor productivity and prices and interest rates to explain the short-term deviations of unemployment from its equilibrium level as determined by the institutional structure. Their model is capable of explaining more than half of the individual country changes in unemployment. Their results are in accordance with theoretical predictions: a higher replacement rate, longer benefit duration, a higher employment tax rate, more union density and less coordination significantly increase unemployment. Stricter employment protection also seems to raise unemployment.

The other type of study that relates changing institutions to unemployment is static in the sense that it does not aim at explaining the exact annual level of unemployment, but rather the underlying structural trend. This kind of study therefore does not rely on the measurement of shocks. Belot and van Ours (2004) provide a notable example of this line of reasoning. They provide econometric estimates of the impact of labour market institutions on unemployment on the basis of a panel of 17 OECD countries for the period 1960-99. The only variable they include to account for deviations from the natural non-accelerating level is the change in inflation. Their basic regression results, without allowing for fixed effects, show a significant effect of the replacement rate, taxes, employment protection, union density and centralisation on unemployment. All variables, except employment protection legislation, have the expected sign. Yet in contrast with the results from Blanchard and Wolfers (2000) and Nickell et al. (2003), Belot and van Ours find that stricter employment protection legislation lowers unemployment. This does not necessarily oppose theoretical predictions, as theory is ambiguous about the direction of the effect. When country and time-period fixed effects are introduced, most institutions do not significantly influence unemployment anymore. Belot and van Ours argue that it is the effect of the complete institutional framework that matters. To investigate this hypothesis, they extend their analysis to allow for interactions between institutions. These interactions indeed significantly affect the unemployment rate. This happens at the expense of the direct effects of some of the institutions considered.

Two broad lessons can be drawn from the existing body of empirical work on the impact of institutions on unemployment: i) institutions matter and a substantial part of the fluctuation in unemployment can be explained by changes in the institutional structure; and ii) theoretical predictions about the way institutions influence unemployment are confirmed by the econometric results. These empirical studies invariably use a selection of about 20 highly developed OECD countries. It is not at all certain that the explanatory power of labour market institutions for unemployment is the same for countries in a different phase of development. In the next section, we try to extend the existing empirical work to understand whether labour market institutions can explain the variation in unemployment figures of the acceding countries.

5.2 Empirical results for the new member states

We use the recent study of Belot and van Ours (2004) as a basis for our analysis. This is a convenient starting point for at least two reasons. First, it uses data for the period 1960-99, whereas most other empirical studies use a sample dating up until 1995. For our purpose, using such recent years in the empirical analysis is essential, as unemployment in the acceding countries only stabilised at around 1995. At that time, markets had adapted somewhat to the new circumstances. Second, Belot and van Ours assess the structural impact of the institutional framework on unemployment, rather than the interaction of shocks and institutions or the explanation of actual unemployment. This fits nicely with the objective of our study: we want to understand whether unemployment in the acceding countries can be explained by the way labour market institutions are built.

Belot and van Ours kindly provided us with the data they used. These include the tax wedge, replacement rate, employment protection, union density and centralisation as well as data for unemployment and employment for 17 OECD countries.[10] We were able to extend the sample with the four largest new member states (Poland, the Czech Republic, Hungary and the Slovak Republic).[11] In order to include these countries, we use different indicators for both the tax wedge and for employment protection legislation. In addition, following the discussion in the previous sections, we constructed series for the replacement rate in the first year and the duration of unemployment benefits, for statutory minimum wages (as a percentage of average wages) and for active labour market policy (normalised on the unemployment rate percentage). A detailed description of sources and computations can be found in the Data Appendix at the end of this document.

5.2.1 Results

Table 6 presents the results of our regressions for the unbalanced panel of 21 countries. The empirical results are based on five-year averages; the maximum number of observations is therefore a total of eight periods covering five years each (during the period 1960-99) multiplied by 21 countries = 168 observations. Nevertheless, as we have only data for the last five-year period for the four accession countries, it is reduced to 140. All the regressions include dummies for the time periods included to account for cyclical variation. Furthermore, following Nickell and Layard (1999) and Belot and van Ours (2004), we include the change in inflation in our regressions in a modest attempt to control for some of the deviations from the structural unemployment rate.

The first column in Table 6 shows the estimation results of our benchmark specification.[12] The results imply that the unemployment rate is positively influenced by taxes and by benefit duration.

[10] These are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, Sweden, Switzerland, the UK and the US.

[11] Including other acceding countries severely restricts the number of labour market institutions we could include in the regressions.

[12] We have also experimented with interactions between institutions. In contrast to Belot and van Ours (2004), these interaction terms turned out to be insignificant in our regressions and we therefore decided not to show these here.

Surprisingly, the first-year replacement rate has a negative impact. Stricter employment protection and more coordination also significantly lower unemployment.

Table 6. Regression results explaining the unemployment rate in 21 countries

	(1)	(2)	(3)
Tax wedge	0.142**	0.194**	0.039
Replacement rate, first year	-0.024*	0.011	0.074**
Benefit duration	0.014**	0.006	-0.013
Employment protection legislation	-0.027**	-0.017	-0.000
Union density	0.019	0.039**	0.099**
Coordination	-0.012**	-0.011*	-0.011**
ALMP		-0.133**	-0.136**
Minimum wage			0.144**
Change in Inflation	-0.503**	-0.652*	-0.537
Adjusted R2	0.57	0.48	0.63
Total number of observations	140	72	44
Period	1960-99	1980-99	1980-99
Time dummies?	Yes	Yes	Yes

Notes: ** indicates 5% significance-levels, * indicates 10% significance levels; significance is based on White heteroskedasticity consistent standard errors.

Below, we discuss the interpretation of the coefficients in more detail. The tax wedge has a major effect on unemployment: a 1 percentage point higher tax wedge raises unemployment by 0.14%. Regarding the unemployment benefit system, instead of using one summary variable, we try to disentangle the effects of the level of benefits and the duration of entitlement. According to our estimations the first-year replacement rate has an unorthodox negative albeit small effect on unemployment, whereas a higher duration of entitlement does significantly increase unemployment. We would expect both variables to exert upward pressure on unemployment, as has been found by Nickell et al. (2003). A possible explanation is that the tax wedge and the replacement rate are correlated. Nickell et al. (2003) do not include the latter variable.

Theory is ambiguous about the effects of employment protection legislation on unemployment. Our results imply that stricter employment protection significantly lowers unemployment. This supports the findings of Belot and van Ours, but contradicts the results of a number of other studies. An implication is that a rigid labour market is not necessarily bad for employment. As the EPL-variable ranges from zero to one, the maximum effect of stricter regulations is 2.7%.

Turning to wage formation, we included union density and coordination as independent variables. The bargaining power of trade unions improves with more members, so we expect higher union density to lead to higher wage demands at the expense of higher unemployment. The estimated coefficient is indeed positive, albeit small and statistically insignificant. Coordination of wage bargaining leads to lower unemployment: under fully coordinated bargaining unemployment is 2% lower than under fully uncoordinated bargaining. Our results thus support the corporatist view of wage bargaining. This result is in line with most other empirical studies. Finally, the change in inflation appears significantly negative in the regressions. This is in accordance with theoretical predictions.

Two elements of the discussion of labour market institutions in previous sections are still missing in the regressions presented so far. These are active labour market policies and minimum wages. Data on both variables are only available from the 1980s onward, so when including these we have to drop half of the observations. The second column in Table 6 shows the regression results when we extend the analysis of the first column with expenditure on active labour market policies, measured as the amount

per unemployed person. The regressions are run for the period 1980-99 and include 72 observations. The results show that active labour market policies significantly affect unemployment: when more money is targeted on the unemployed in the form of one of the various programmes covered under the heading ALMP, unemployment decreases. This extension does have some effects on the other estimated coefficients. The impact of the replacement rate now turns positive, as expected, although the effect is not significant. The estimated impact of both benefit duration and employment protection also loses significance, but keep the expected sign. In contrast, the estimated impact of union density becomes significant: a 10% increase in union membership raises unemployment by 0.4%.
Including minimum wages poses some more problems. In a number of countries no statutory minimum wage exists, but industry- or occupation-specific minimums are set by legislation or collective bargaining agreements. It is possible to include the summary estimates constructed by Dolado et al. (1996) for these countries, as has been done in some other empirical studies (e.g. Neumark and Wascher, 2003). We don't follow this practice here, because i) this series has not been updated and ii) the Dolado series does not use the same denominator as the OECD series. In the present study we restrict our empirical analysis to the countries for which statutory minimum wages exist.[13] The results are presented in the last column of Table 6 and use 44 observations from the period 1980-99. In line with theoretical predictions, minimum wages (measured as a percentage of median wages) significantly raise unemployment. The estimated coefficient implies that increasing the minimum wage relative to the median wage by 1% results in 1.4% more unemployment. This addition also has implications for some of the other estimated coefficients. Most striking is that the tax wedge is no longer significant, but that the estimated effect of the replacement rate becomes highly significant and much larger than in the other regression results. This may be because of the fact that replacement rates and tax wedges are highly correlated. It may therefore be hard to disentangle both effects. The coefficient on union density is also influenced by adding the minimum wage variable to the regression: it becomes much more important than in the earlier results.

In conclusion, the empirical results seem to provide support for the theoretical predictions on the influence of labour market institutions on unemployment. The effects are, however, sensitive to the specification of the regression, the sample period used and the countries considered. These results therefore should not be interpreted as exact estimates of the effects of labour market institutions on unemployment, but they provide an idea of the importance of different factors.

5.3 Implications for unemployment in the new member states

To what extent does the design of labour market institutions in the new member states provide an explanation for the level of unemployment rates in these countries? This is the central question of this paper. In the previous section we have seen that labour market institutions are in general no more rigid in the new member states than in the EU-15. Nevertheless, a lot of heterogeneity exists among the acceding countries. In this section we use our empirical results to assess whether this heterogeneity can explain the huge variation in unemployment rates for the four acceding countries that we included in the regressions. As our exact estimation results in the previous section were quite sensitive to the specification of the regression equation and did not explain more than 60% of the variation, we do not expect to be able to fully explain these differences in unemployment rates. Our results, however, are in line with theoretical predictions and with other empirical work. So, if labour market institutions are the major determinant of unemployment in the new member states, the regression results should certainly explain a substantial part of the variation.

[13] These are Australia, Belgium, Canada, France, Ireland, Japan, the Netherlands, New Zealand, the UK, the US, Poland, Hungary, the Czech Republic and the Slovak Republic.

Table 7. Implied unemployment rates in the new member states

	Actual UR (1995-99)	Implied UR (1)	Implied UR (2)	Implied UR (3)	Actual ER (1995-99)
Poland	11.5%	10.7%	12.1%	11.2%	58.4%
Hungary	8.5%	11.1%	13.0%	12.4%	53.0%
Czech Republic	7.5%	10.1%	11.1%	8.0%	69.1%
Slovak Republic	13.7%	8.1%	10.3%	11.5%	59.5%

The first column of Table 7 shows the average unemployment rates over the period 1995-99 in these countries: ranging from 7.5% in the Czech Republic to no less than 13.7% in the Slovak Republic. The proceeding columns confront these values with the unemployment rates that are implied by the results of the regression in Table 7 The second column shows the results of our computations when we apply the estimated coefficients from the first regression (covering 1960-99 without ALMP or minimum wages) to the labour market institutions in the acceding countries.

In contrast to reality, the implied unemployment rate turns out to be lowest for the Slovak Republic. There are two reasons for this result: the tax wedge is a bit lower in the Slovak Republic than in the other acceding countries and wage formation is relatively coordinated. According to the regression results, both aspects have a downward effect on unemployment. The big difference with actual unemployment seems to suggest that other factors besides labour market institutions also play a role in the Slovak Republic.

The highest implied unemployment rate is found for Hungary. This also seems completely at odds with the data: the official unemployment figure for Hungary is quite low. At first sight, it thus seems that these results sketch an overly pessimistic picture of the Hungarian case. A more detailed inquiry into the Hungarian figures reveals that the modest unemployment rate is accompanied by extremely low employment. The last column of Table 7 shows the employment rates for the acceding countries. Average employment over the period 1995-99 was only 53%, lower than in any other country considered. From these data it seems that much hidden unemployment exists in Hungary. The declining unemployment rates in the 1990s were not matched by increasing employment levels. Unemployed people do not register anymore since Hungary toughened the unemployment benefit eligibility criteria or they have found a job in the underground economy. In any case, labour market institutions might be more of a burden than actual unemployment figures seem to suggest. The tax wedge in particular is extremely high at 51.5%.

The third column shows the implied results from the second regression, where we included expenditure on active labour market policies. The implied unemployment rates increase in all new member states, reflecting the relatively low spending on ALMP. The order between the four acceding countries does not change: the implication of labour market institutions alone would be that unemployment in the Slovak Republic is lower than in the three other countries.

In the fourth column we use the results of the final regression (with minimum wages) for our computations. This has a major impact on the results. Implied unemployment is now lowest in the Czech Republic, in accordance with reality. The reason behind this result is twofold. First, minimum wages are low in the Czech Republic. Second, in the regression result replacement rates have gained importance at the expense of the tax wedge. Because the replacement rate is very low in the Czech Republic, this implies a lower unemployment rate of only 8.0%. In fact, this is close to the actual figure of 7.5% over the period 1995-99.

The implications for Hungary remain as before: implied unemployment is high. As explained before, we think that this reflects the actual situation on the labour market. Reducing the tax wedge and the replacement rate, along with re-evaluating the recent minimum wage increase would probably be important steps toward a better functioning labour market in Hungary.

Implied unemployment for the Slovak Republic increases considerably to 11.5%. This is still well below actual unemployment. Furthermore, as described in section 2, unemployment has further increased in recent years to 19% in 2002. Data on labour market institutions alone are not capable of explaining this development.

This holds even more strongly for Poland. Although there is only a modest difference between implied and actual unemployment, institutions fail to explain the enormous increase in unemployment in recent years. Unemployment in Poland rose from 11% in 1997 to almost 20% in 2002. Clearly, other factors play a role in explaining this disastrous development.

From the results in this section we can conclude that labour market institutions can only account partially for the performance of the labour market, and that other aspects are important as well. In the next section we will list some other potential reasons behind the recent rise in unemployment rates in Poland and the Slovak Republic.

6. Other causes of unemployment

Our descriptive assessment of labour market institutions suggests unemployment should not be higher in the new member states than in the EU-15. Our empirical results draw the same conclusion: labour market institutions explain only a minor part of unemployment in the new member states, let alone the diverging trend since 1998. Since then, unemployment has been rising in Poland and the Slovak Republic, whereas in Hungary and the Czech Republic unemployment remained stable. These developments suggest that other factors are responsible for unemployment.

This section aims at giving some explanations for the increase in unemployment in Poland and Slovakia. Luckily, these countries are exceptions: none of the other new member states face comparably high unemployment rates. Lithuania comes nearest with 12.7%.

6.1 Other institutional factors

The difference in foreign direct investment the acceding countries attracted during 1990-2000, was large: Hungary and the Czech Republic received more than twice the per capita amount Poland and the Slovak Republic received. FDI increases the number of jobs created temporarily. Lower FDI can therefore affect unemployment in an indirect manner. One of the factors determining the level of FDI attracted is a country's political and economic stability (Nesporova, 2002). FDI is not the only factor that is negatively influenced by weak governance.

A recent report on the Slovakian business environment states that the business community perceives the weak legal environment as a major problem (PAS, 2002). Complaints concern the instability and ambiguity of legislation, poor and slow enforcement of law (including the registration of enterprises) and corruption. According to public perception surveys, corrupt practices are widespread at the interface of the public and private sectors. Small-scale entrepreneurs suffer from inadequate protection of property rights. Smaller businesses are more vulnerable to the infringement of their property rights and to exploitation by unscrupulous officials and organised crime. Moreover, the administrative barriers to business creation and entry are still unnecessary high. Illicit payments reportedly take place to quicken the registration process. After 2002, the new government announced reforms, making the taxation and regulatory frameworks more supportive of new enterprise creation and business development. They stated it was necessary to enhance 'cultural' changes in law- and rule-enforcement so as to make the formal regulatory framework fully reliable (OECD, 2004).

Table 8 shows three World Bank Governance Indicators related to the legal, political and business environment in the four largest new member states: *government effectiveness*, *regulatory quality* and *rule of law*. *Government effectiveness* measures the quality of public service provision, the quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures and the credibility of the government's commitment to policies. *Regulatory quality* is more focused on the policies themselves. It includes measures of the incidence of market-unfriendly policies

such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development. Under *rule of law* several indicators are included that measure the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. *Rule of law* measures the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions, and importantly, the extent to which property rights are protected (Kaufmann et al., 2003).
Poland and especially the Slovak Republic score lower than Hungary and the Czech Republic on all indicators. Slovakia scores lower than all other new member states on all indicators, except Poland on *regulatory quality*. Particularly *government effectiveness* and *rule of law* are particularly low in Slovakia, implying lack of credibility of the government, low quality of civil servants and public service provision and poor judiciary power. Poland scores lowest on *regulatory quality*, implying market-unfriendly policies and excessive regulation in business development – measures that are detrimental to job creation.

Table 8. Governance idicators, 2002

	Government effectiveness	Regulatory quality	Rule of law
Poland	0.61	0.67	0.65
Hungary	0.78	1.21	0.90
Czech Republic	0.70	1.12	0.74
Slovak Republic	0.40	0.76	0.40

Note: The indicators range from -2.5 (low) to 2.5.

Source: Kaufmann et al. (World Bank) (2003).

Introducing the *rule of law* into our regressions from the previous section gives us an indication how this indicator affects unemployment. A drawback of these data is that they are only available from 1996. In our regressions, we use the average *rule of law* score for 1996-99 to proxy for the quality of these institutions over the whole period considered. We expect that countries with a less well-developed institutional framework show higher unemployment rates. The estimated coefficient indeed supports our prior expectations: a higher score on *rule of law* indicator has a dampening effect on unemployment. The results with respect to the other variables are hardly affected by the introduction of this indicator.

6.2 Postponed structural reforms and strict monetary policy

The Governance Indicators shown above have improved in recent years in both Poland and the Slovak Republic. Therefore they cannot explain the marked increases in unemployment rates in Poland and the Slovak Republic in recent years. These increases can be partly attributed to (postponed) restructuring. Below, we'll explore this and other causes for unemployment rises in Poland and the Slovak Republic.

At the outset of transition, Poland was fast in the liberalisation of prices, currency devaluation and macroeconomic austerity measures, but was slow in privatisation and structural reforms of certain sectors (agriculture, coal mining and steel). This created structural problems. A tight monetary policy and acceleration of structural changes were enforced after 1998 to tackle economic imbalances. The combination of a strict monetary policy and major social reforms with many initial problems resulted in escalating unemployment (Nesporova, 2002).

Also in 1998, following elections that put an end to a period of dirigisme and international isolation, the Slovak Republic commenced with key liberalisation reforms resulting in growing inflows of FDI

and large-scale industrial restructuring. The restructuring caused a significant improvement of trend productivity growth. Yet the growth process was not able to redirect those losing their jobs in transition restructurings into productive use, reflecting both insufficient demand for and weak effective supply of labour in the lower segment of the market. Unemployment increased, mainly among low-skilled workers. Indeed, Slovakia has the highest unemployment rate for the low-skilled: 39% in 2001 (OECD, 2004). In both countries, at the same time that restructuring started, inflation rose.

Poland reduced its inflation rate by 10%: from 12% in 1998 to 2% in 2002. Structural reforms in combination with tight monetary policy may have been a cause of the 10% increase in Polish unemployment in the same period: from 10 to 20%.

In the Slovak Republic, disinflation objectives were pursued without an excessive tightening of monetary conditions.[14] During 1998-2002, inflation declined by almost 4% to a level of 3%. In the same period, unemployment rose by about 6% to a level of 17%.

It is generally known that a trade-off between inflation and unemployment rates exists. Mankiw estimates the *sacrifice ratio* (the trade-off between GDP and inflation) at 5%, implying a 1% decline in inflation costs 5% GDP. Together with Okun's law, stating that 1% unemployment coincides with a 3% loss in GDP (Hall and Taylor) this implies that reducing inflation by 1 percentage point requires about 1.67 percentage points of cyclical unemployment. Although the trade-offs above seem to be less distinct, they may play a role in explaining increasing unemployment rates. Especially in Poland, where restructuring was implemented at a time monetary policy when was tightened, this trade-off may provide an explanation for rising unemployment.

Notably, restructuring implies the shifting of employees between sectors. The people losing their jobs as a consequence may not be suitable for vacant jobs, for instance because they are low-skilled. As a result, they remain unemployed.

The Polish agricultural sector still employs as much as 19% of the labour force. Other countries have been faster in restructuring their agricultural sectors: in Hungary, the Czech Republic and the Slovak Republic, only about 6% of the labour force is employed in the agricultural sector (see Table 9). Agriculture in Poland probably is to some extent a refuge sector: poor job opportunities and low unemployment benefits prompt people to make a living cultivating kitchen gardens or small family holdings. The professional status of the persons employed confirms the idea of a refuge sector: over 90% of the people employed in this sector are family workers or self-employed without employees (Eurostat, 2002). Poland faces increasing future unemployment, as reforming this rather large sector will force its employees to shift to other sectors. Restructuring already caused approximately 200,000 people to lose their jobs during 1998-2000. Finding a new job in a different sector is not easy: in the same period, 200,000 jobs were lost in the service sector and about 440,000 jobs disappeared in the industrial sector (especially in mining and manufacturing). Privatisation deals, particularly in Poland, included temporary bans on mass redundancies. The expiry of such privatisation clauses after 1998 was one reason for the rapidly increasing unemployment in this country (Nesporova, 2002). Since the restructuring of loss-making state sectors (steel, defence and railways) is an ongoing process, major job loss is caused in these sectors, specifically hitting unskilled and low-skilled workers. Moving these employees from these old to new sectors (for instance services) is difficult in the current institutional and regulatory environment remaining detrimental to job creation (OECD, 2001, EIRO, 2003).

[14] Disinflation has been helped by currency appreciation and international price moderation, but the key to successful disinflation thus far has been the ability of the Central Bank to contain second-round effects of administered price hikes through active policies.

Table 9. Share of employment in agriculture over time

	Share of employment in agriculture (%) 1994	Share of employment in agriculture (%) 2002
Poland	23.8	19.3
Hungary	9.0	6.3
Czech Republic	6.9	4.8
Slovak Republic	10.2	6.2

Source: OECD.

To estimate the role of a large agricultural sector in labour market performance, we introduced this indicator in our regression. Our conjecture is that a country with relatively more agricultural activity compared with the size of this sector in neighbouring countries is assumed to be in the process of transforming and catching up. A higher share of agriculture therefore goes hand in hand with a higher unemployment rate. Our hypothesis is confirmed: a higher share of agriculture raises unemployment. In particular, 1 percentage point extra employment in agriculture causes an extra 0.1 percentage point of unemployment. The results with respect to the other variables are hardly affected by the introduction of this indicator.

The Slovak Republic has another sector to worry about: Slovakia's share of general government employment is one of the highest within post-transitional OECD countries (21%).[15] There is an obvious need for a smaller and more effective government. Restructuring the general government will probably cause more unemployment.

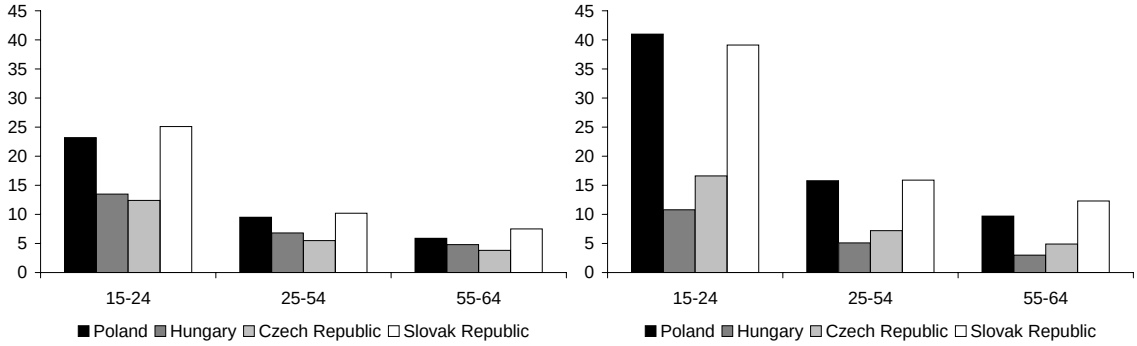
Moreover, unemployment among low-skilled workers is high. In other OECD countries many low-skilled workers are successfully employed in private services as salaried employees or are self-employed, while these types of activities remain underdeveloped in Slovakia. Slovakia's inability to generate jobs for marginal workers has not improved in the recent period. Almost a quarter of a million low-skilled jobs requiring no more than primary or incomplete secondary schooling disappeared during 1994-2002 and their share in total employment plummeted from 20 to 8% (OECD, 2004).

6.3 Increasing labour force: Youth unemployment

Finally, demographic changes contributed to increasing unemployment. During 1987-2002, the population in both Poland and the Slovak Republic has been growing modestly (with 2.5% and 2.9%, respectively), whereas population has been declining in Hungary and the Czech Republic (with 4.4% and 1.5%, respectively). Demographic changes affect labour supply: during 1998-2000, the Polish labour force increased significantly as a result of large groups of young school-leavers entering the labour market. This is in line with Figure13 below, showing the major increase in youth unemployment in Poland and the Slovak Republic in 2001 compared with 1998.

[15] The share of government does well exceed Germany (11%), Ireland (12%), the US (15%), Spain (14.5%), Italy (16%), Portugal (18%) and Belgium (18%), but lies under the share in Scandinavian countries (30%) and France (23%).

Figure 13. Unemployment per age group, 1998 (left) and 2001(right)



Source: OECD Unemployment Outlook (2002), Statistical Annex.

In addition to the high youth unemployment rate in Slovakia, the proportion of those aged 15 to 19 who are in neither the education nor the labour force is also the highest in the OECD, at 25%(OECD, 2004)

Most reasons for high unemployment growth during the past few years in Poland and the Slovak Republic are of a temporary nature. This suggests high unemployment is cyclical. Ongoing restructuring in combination with tight monetary policy, along with educational or sectoral mismatch between labour demand and labour supply caused unemployment rates to increase fast. Weak governance is not behind rising unemployment but could continue to depress the labour market situation at length.

Although temporary, some of the causes of unemployment mentioned in this section (e.g. job loss, the shifting of employees to other sectors because of restructuring and an increasing labour force) could acquire a permanent character if no new jobs are created and these persons remain unemployed for a considerable length of time. Low-skilled and youth unemployment could turn out to be a permanent problem in Slovakia unless education is promoted, whereas Poland faces increasing unemployment when the agricultural sector is reformed and already faces high youth unemployment.

7. Conclusions

The enlargement of the European Union with ten new member states represents a large change. Some 15 years ago, most of the new member states were still led by a communist government. Workers enjoyed a high degree of employment protection and pay systems were fairly rigid. Many people in the EU-15 therefore worried about the possible consequences of the new situation. Although labour markets in the EU-15 are often blamed for their inflexibility, which acts as an impediment to economic development, the rigid systems in the former communist countries would certainly be no better, so the story goes. High unemployment in Poland supports this idea. The envisaged rigidity of the Central and Eastern European labour markets therefore seems to justify fears about labour market problems in the enlarged European Union.

Nevertheless, much has happened in the new member states in the past decade. Since the beginning of the transition, the social security systems have been revised drastically: replacement rates are now comparable to those within the EU-15, but benefit duration is markedly shorter in acceding countries. Employment protection has been liberalised and minimum wages have been introduced. The collective agreements, as bargained over at the decentralised industrial or firm level, now cover the majority of employees in the new member states. It is only expenditure on active labour market policies that still remains low. In short, labour market institutions in the new member states do not on average differ that much anymore from the institutions in the EU-15. If anything, they should be considered more flexible.

Common knowledge suggests that unemployment in the new member states is much higher than in the EU-15. Yet five out of the ten new member countries show unemployment rates below the weighted average in the EU-15. This does not mean that there are no labour market problems in the new member states. Just as in the EU-15, a great deal of heterogeneity exists among the acceding countries. In some of them, labour market reforms could prove a key issue in improving employment performance. The most notable example is Hungary, where a high tax wedge poses severe problems.

The main worry with respect to labour market performance is presented by Poland and the Slovak Republic, representing more than half of the population in the new member states. Unemployment rates have risen dramatically in these two countries in recent years, reaching levels of almost 20%. Our research clearly shows that labour market institutions are not capable of explaining this development. Other factors must be behind these rising unemployment rates.

Three factors seem to play a key role in explaining recent unemployment growth in Poland and the Slovak Republic. The most important factor appears to be postponed structural reforms. Both countries went through key liberalisation reforms in recent years, while tightening monetary policy at the same time. This has put an upward pressure on unemployment. A second factor is the weak quality of the rule of law in both countries. As a consequence, they attracted less FDI than other acceding countries. Third, demographic changes played a role.

Most of the reasons for high unemployment growth during the past years in Poland and the Slovak Republic are of a temporary nature. This suggests high unemployment is cyclical. Some of the reasons, however (e.g. job loss, the shifting of employees to other sectors as a result of restructuring and an increasing labour force), could acquire a permanent character if no new jobs are created and unemployed people remain jobless for a considerable length of time.

Do labour market institutions cause high unemployment in the new member states? Our answer is no. The new member states with the highest unemployment rates do not feature overly rigid labour markets. The reasons behind their malfunctioning labour markets are related to other factors. Labour market institutions in the new member states are comparable to those in the EU-15 and can only account for a small part of the problems in Poland and the Slovak Republic. Nevertheless, just as in the EU-15, labour market reforms may be needed in a number of accession countries in order to further improve economic performance.

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Data Appendix

The regressions in section 5 use data for a sample of 21 countries over the period 1960-99.

This appendix describes the data and the sources from which they were obtained in more detail.

Countries

We include 21 countries in our regressions. These are the four largest new member states (Poland, the Czech Republic, Hungary and the Slovak Republic) and the 17 countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, Sweden, Switzerland, the UK and the US) that Belot and van Ours (2004) include in their regressions. Henceforth we will refer to Belot and van Ours (2004) as BvO.

Unemployment rate

The unemployment rate is taken from the OECD for the years 1960-2000. We use the standardised unemployment rate as obtained from the Main Economic Indicators (MEI).

Tax wedge

For 1960-79 we rely on the tax rate series constructed by BvO. This tax rate is calculated as the sum of the employment tax rate and the direct tax rate. A more detailed description of their calculations can be found in the data appendix accompanying their publication.

Because we were unable to extend this series to the new member states, we decided to use a different indicator for the period 1979-2000. For this period we use the tax wedge as obtained from the OECD. The series we use refers to a single average production worker and can be found in table 3/6 in the annex to the OECD-publication *Taxing Wages 2000-2001*. The total tax wedge is defined there as "employees' and employers' social security contributions and personal income tax less transfer payments as percentage of gross labour costs".

Replacement rate first year

The OECD has collected systematic 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 (first year, second and third years, fourth and fifth years) from 1961 to 2001 (every other year). From this, we calculated a summary measure for the replacement rate in the first-year by taking a simple average over the first year replacement rates for the three family types. The replacement rate used by BvO is computed by taking the mean for all nine categories.

Unemployment benefit duration

We follow Nickell (2003) in calculating a measure of the unemployment benefit duration. He starts from the OECD data described in the previous paragraph and computes the indicator by normalising the level of benefit in the later years of the spell on the benefit in the first year

of the spell. The exact formula reads as follows: [0.6 (2nd and 3rd year replacement ratio) + 0.4 (4th and 5th year replacement ratio)] ÷ (1st year replacement ratio).

Employment protection legislation

For the 17 countries for which BvO have data available, we use the index they constructed. This series measures the strictness of employment regulation with respect to open-ended contracts, fixed-term contracts and temporary work agencies. See BvO for further details.

For the four new member states we use data constructed by Nicoletti et al. (2000). We normalised these to the same range as the series from BvO.

Union density

We obtained the union density series from BvO. The original source is the OECD Labour Market Statistics.

Centralisation

Index (1-3) characterising the degree of centralisation of the bargaining system, with higher numbers indicating more centralisation: 1 = firm level, 2 = industry level and 3 = national level. Source: BvO.

Coordination

Index (1-3) characterising the degree of coordination of the bargaining system, with 3 being the most coordinated. Source: BvO.

Active labour market policies

Expenditure on active labour market policies as a percentage of GDP is obtained from the OECD Labour Market Statistics. Following Nickell et al. (2002), we normalised the series by dividing it by the unemployment rate.

Statutory minimum wage (as percentage of the average wage)

Source: OECD Labour Market Statistics.

Change in inflation

To measure the change in inflation we start from the consumer price index (CPI) as obtained from the series 'CPI all items' from the OECD. This is an index series, with the value for 1995 normalised at 100. For the four new member states this series is available from 1995 at the latest. For the other 17 countries, this series is available from 1960, with the exception of Denmark, for which the series start at 1968. For Denmark we therefore use a different series, the consumer price index from the Luxembourg Income Studies, for the first two five-year periods. We obtained this series from BvO, who use it for all countries for the whole sample period.

Inflation in year *t* is calculated as: $INF_t = (CPI_t - CPI_{t-1}) / CPI_{t-1}$.

Finally, the change in inflation in year *t* is defined as: $CHI_t = INF_t - INF_{t-1}$.

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NIESR	National Institute of Economic and Social Research, London, UK
NOBE	Niezalezny Osrodek Bana Ekonomicznych, Lodz, Poland
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European Network of Economic Policy Research Institutes
c/o Centre for European Policy Studies
Place du Congrès 1 ▪ 1000 Brussels ▪ Tel: 32(0) 229.39.11 ▪ Fax: 32(0) 219.41.51
Website: http//:www.enepri.org ▪ E-mail: info@enepri.org