

Are the labour market regulations  
in Central and Eastern European EU accession  
countries premature?

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# Are the labour market regulations in Central and Eastern European EU accession countries premature?

Michael Münch\*

## Abstract

This paper discusses the employment effects of labour market regulations that have been introduced or maintained in Central and Eastern European during transition. Providing empirical evidence from cross-country comparison and bivariate regression, it contributes to answering the overarching question, if EU enlargement entails the proliferation of “Eurosclerosis”, i.e. labour market rigidities and high, protracted unemployment. This paper’s analysis yields four major findings. First, labour market performance is not related to GDP growth. Second, labour demand does respond to changes in real wages and too high wage growth has contributed to unemployment. Third, employment protection legislation (EPL) does not increase aggregate unemployment but causes persistence by slowing down labour turnover and increasing the share of long-term unemployment. Finally and most surprisingly, minimum wages do ‘bite’ in CEE despite their relatively low level by international standards.

**Keywords:** Employment protection legislation, minimum wages, unemployment, Central and Eastern Europe.

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## Introduction

The transition from central planning to the market was expected to lead to rampant open unemployment as a transitory phenomenon in Central and Eastern Europe (henceforth CEE). Yet, unemployment has persisted at rather high levels in many countries and has taken the form of structural unemployment with high levels of long-term and youth unemployment. The labour market problems in CEE therefore strikingly resemble those of some of their West European neighbours. The divergent labour market performance in Europe and North America during the 1980s and 1990s has spurred a controversial debate about the influence of institutions on labour market outcomes. The neoclassical view has criticised European labour markets as being ‘sclerotic’ (Giersch, 1985) and has argued that – besides other institutions – employment protection legislation (henceforth EPL) and statutory minimum wages caused unemployment by making wages inflexible and slowing down adjustment to exogenous shocks. This view has been contested by supporters of labour market regulations who have called the negative employment effects into question and who have proposed that regulation is conducive to productivity. The ‘Varieties of Capitalism approach’ has recently extended the debate by stressing the importance of institutional complementarities for firms’ specialisation on innovation and production strategies (Hall and Soskice, 2001).

In the light of this debate, this paper seeks to establish whether the introduction of EPL and the maintenance of statutory minimum wages in CEE in the early 1990s was premature regarding their potential negative effects on employment. Along neoclassical lines, EPL and minimum wages in CEE can be considered as premature since the extraordinary structural adjustments of transition necessitate as flexible labour markets as possible. From a Varieties of Capitalism perspective, regulations might have caused adverse employment effects since many complementary institutions (e.g. social dialogue, in-house vocational training schemes, etc.) have not been in place yet. Consequently, this reasoning predicts that regulations are related to wage inflexibility, high unemployment rates

and low employment levels in Central and Eastern European Countries (henceforth CEECs).

This working hypothesis is tested empirically by examining whether the differences in regulation between CEECs can explain the variance of labour market outcomes across the region. It thereby focuses on the current ten EU accession and candidate countries in order to keep differences in the overall macroeconomic and institutional environment under control (for a discussion of these differences see World Bank, 2000a; Rashid and Rutkowski, 2001; Berglof and Bolton, 2002). The sample includes: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia. Moreover, the paper is primarily concerned with legal regulations, that is employment protection legislation and minimum wages, although labour market performance is also influenced by other institutions like unemployment benefit and social assistance systems, collective wage bargaining and the taxation of labour (see e.g. Nickell and Layard, 1999). Influences of these institutions are taken into account where appropriate and possible; their comprehensive discussion, however, is beyond the scope of this paper and has been carried out elsewhere (Boeri, 2000; Cazes, 2002; Riboud, Sánchez-Páramo and Silva-Jauregui, 2002; Svejnar, 2002). This paper thus aims at offering a contribution to the existing literature through its special focus on regulations and its comparative method which primarily focuses on explaining variance within the region.

Data limitations and the small number of cases constrain the empirical analysis. First, the data available for most countries are sketchy due to frequent changes in collection methodology (see e.g. Chernyshev, 1997). Nevertheless, labour force surveys that follow international standards were introduced in many countries in 1993 and are a useful resource for consistent time series data. The analysis is more seriously constrained, however, by the small number of cases. On one hand, the maximum number of cases is limited to ten by the size of the sample. On the other hand, comparable data are not available for all cases in all variables. This limitation unfortunately confines the analysis to the use of bivariate regressions and precludes the use of more sophisticated multivariate analysis. The evidence produced in this study therefore has to be treated with

care and should be taken as preliminary until improved data availability allows for more thorough investigation.

This paper is structured as follows: the first section reviews the theoretical and empirical literature on EPL and minimum wages which has been framed by the ‘Eurosclerosis’ debate and deduces some implications for transition. Section two lays the ground for the empirical analysis by contrasting labour market regulations in CEE against those found in the EU and the U.S. and by outlining the major macroeconomic and labour market trends. Finally, section three tests if unemployment in CEE has been driven by wage rigidities and if labour market regulations can be held accountable for that.

## **2 Does Regulation Cause Unemployment? Lessons from the ‘Eurosclerosis’ Debate**

The divergent labour market performance in Western Europe and North America during the 1980s and 1990s has spurred a lively debate about the advantages and disadvantages of labour market institutions on each side of the Atlantic. This ‘Eurosclerosis’ debate has been shaped by two opposing views that will be briefly reviewed in this section. The neoclassical mainstream view has depicted European labour markets as ‘sclerotic’ (Giersch, 1985) and ‘over-regulated’, whereas North American institutions have been held up as icons of efficiency, implying that flexible markets boast a superior performance record – although at the price of higher inequality. Due to its neoclassical assumptions, the mainstream view focuses on wage flexibility in order to reach the market-clearing equilibrium. Accordingly, unemployment is perceived as being caused by wage rigidities that have their roots in the institutional framework of labour markets. This contention has been opposed by the neo-institutionalist<sup>1</sup> view which stresses the imperfection of labour markets and assumes the productivity of workers to be an endogenous variable rather than to be given in the short run. Consequently, unemployment is regarded as the result of market imperfections

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<sup>1</sup> This classification partly follows Crouch (1998) who distinguishes between ‘deregulation’ and ‘neo-institutionalist’ view. I prefer to use ‘neoclassical’ instead of ‘deregulation view’ since the latter is based on the basic neo-classical model and since its proponents argue in favour of individualistic as opposed to collective regulations rather than against regulation at all (a point convincingly argued by Standing, 1991).



that regulation can even help overcome in certain instances. This section reviews the opposing positions on EPL and minimum wages and deduces some predictions on their potential effect in transition.

## 2.1 Employment Protection Legislation

From a neoclassical perspective, EPL not only protects employees from arbitrary actions and provides them with employment security but also raises the costs of labour adjustment and thereby may have adverse effects on the level, the dynamics and the composition of unemployment (for an overview see Nickell and Layard, 1999). Although the *direct* effects of EPL on the overall level of unemployment are theoretically ambiguous, it may entail *indirect* negative effects on employment. On one hand, higher adjustment costs lower dismissals during economic downturn. Conversely, higher firing costs also make firms more cautious about hiring during the next upturn, so that the net employment effect remains theoretically ambiguous as long as the total costs are offset by corresponding wage concessions and do not lead to higher effective labour costs for employers (Nickell, 1978). Indirectly, however, EPL may strengthen the bargaining power of employed insiders vis-à-vis unemployed outsiders because it makes wage underbidding more costly for the latter (Solow, 1985; Lindbeck and Snower, 1986; Flanagan, 1988). Yet, Bertola, Boeri and Cazes (1999: 9) have pointed out that strict EPL *per se* does not necessarily strengthen the bargaining power of insiders since outsiders are still able to “buy” themselves a job’ but that it becomes a powerful tool if combined with institutional wage compression. From a dynamic perspective, insider power may cause downward wage rigidity during economic downturn and real wage growth instead of re-employment of the unemployed during the next economic upturn. As a consequence, persistent and cyclically rising unemployment, i.e. hysteresis, occurs (Blanchard and Summers, 1987).

As regards the effects of employment protection on labour market dynamics and the composition of unemployment, it has been argued that EPL increases long-term unemployment and especially hits disadvantaged groups. Higher labour adjustment costs reduce employer initiated labour turnover in both directions, i.e. they lower separation and accession rates alike, and thereby cause the

unemployment pool to be more stagnant (Bentolila and Bertola, 1990; Nickell and Layard, 1999). In addition, it appears that stricter EPL leads to longer persistence of unemployment after exogenous shocks (Jackman, Layard and Nickell, 1996; Scarpetta, 1996; Blanchard, 1999; Blanchard and Wolfers, 1999). Moreover, as Boeri (1999) finds, EPL – in particular advance notice periods – fosters job-to-job flows and thereby further reduces unemployment turnover because it makes it more difficult for disadvantaged groups to find employment. Long-term unemployed may become stigmatised and their human capital may erode over the time so that their chances to find a job decrease further. School leavers may find it difficult to enter the workforce because of their lack of work experience vis-à-vis already employed applicants (Scarpetta, 1996; Nickell and Layard, 1999; OECD, 1999). Eventually ‘discouragement effects’ can cause a decline in labour supply and lower pressure for wage moderation so that the composition of unemployment affects real wages in the long run.

From the neo-institutionalist perspective, however, employment protection appears to be efficiency enhancing. First, higher employment security may be used by firms as a device to give workers stronger incentives to exercise more effort (Akerlof, 1984). Along the same lines, it has been argued that EPL encourages long-standing and more cooperative industrial relations (Rosen, 1985) and thereby enables incremental innovation strategies that depend on the active participation of workers and helps overcome ‘hold-up problems’ (Williamson, 1985; Hart, 1995) with respect to the formation of firm-specific skills (Piore, 1989; Estavez-Abe, Iversen and Soskice, 2001). From this perspective, employment protection promotes higher GDP growth, lower unit labour costs and should lead to higher and instead of lower employment, *ceteris paribus*, in the long run.

Moreover, the neo-institutionalist perspective casts doubt on the strict causality between the EPL and employment stability. As Buechtemann (1993) has stressed, employment stability – and consequently employment security – need not be externally imposed but can also stem from endogenous factors. For example, a firm’s reliance on a highly trained and specialised workforce can create high *de facto* employment security for these workers since they are not easily replaceable by outsiders. Moreover, if a firm only depends on a part of its work-

ers, the internal labour market will be segmented in a group of indispensable core workers and a group of less strongly attached workers. The insider-outsider effects discussed above may thus be caused by the conditions of production and occur independently of any regulation.<sup>2</sup> By the same token, institutional compression of the wage structure can be explained by endogenous factors. As Bertola and Rogerson (1997) have pointed out, institutional wage setting and employment stability are complementary since the latter cannot be maintained without the principle of equal pay for equal work. Moreover, as recent research suggests, labour market performance is not only influenced by labour market institutions but also by the interaction of a much broader institutional setting in which firms operate as well as by the choice of product and innovation strategies (Hall and Soskice, 2001).

The empirical evidence is ambiguous, however. Whereas the studies conducted by Scarpetta (1996), Elmeskov, Martin and Scarpetta (1998) and Boeri, Nicoletti and Scarpetta (2000) support the view that EPL has a negative effect on unemployment, other studies (Bentolila and Bertola, 1990; Nickell, 1997; OECD, 1999) could not find such evidence. Nevertheless, even the former group of studies reports rather small coefficients. This may partly be caused by collinearity with other variables, such as unionisation, or by opposing effects. For example, bleak job prospects may affect labour force participation and thereby lower the unemployment rate.<sup>3</sup> This is consistent with the more robust empirical evidence that strict EPL reduces the employment rate (Lazear, 1990). There is, however, growing consensus that EPL is correlated with lower labour turnover and thereby affects the composition and persistence of unemployment. The causality is nonetheless undetermined since it is not clear if EPL on its own makes employers more cautious about hirings, or if the use of relationship-specific skills in production diminishes flexibility and creates demand for EPL.

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<sup>2</sup> This may explain why deregulation in France and Germany in the 1980s did not yield the flexibility gains predicted by its proponents (Crouch, 1998).

<sup>3</sup> In addition to that, labour force participation is also affected by the culturally determined participation of women, esp. in Southern Europe, and the incentives set by the social security system (Nickell and Layard, 1999). This makes cross-country comparisons more difficult.

## 2.2 Statutory Minimum Wages

In the neoclassical model, wage differentials must be wide and wage adjustment to structural change must be flexible in order to make employment of low-productivity workers profitable. From this perspective, the specialisation on low-wage, low-cost production stands open as the theoretical alternative to high levels of open unemployment – though, admittedly, at the price of higher inequality. This reasoning follows directly from the neo-classical stipulations that real wages have to equal workers' *given* productivity for labour markets to clear. Moreover, it has been argued that labour reallocation is smoother if mediated through high wage differentials than through open unemployment. In the latter case, adverse selection is likely to confront the least skilled – who are generally also the less prepared – with the challenge to find a new and more productive job. On the contrary, higher wage differentials between high and low-skilled labour give incentives for medium and lower skill employees to climb up the career ladder and thereby spur job-to-job flows rather than flows into unemployment (Berthold and Fehn, 1997).

Hence, minimum wages – besides other labour market institutions<sup>4</sup> - have been criticised to put a floor under real wage adjustments and to compress the wage structure. Though thought to secure 'fair' pay for low-productivity workers and to prevent the emergence of a class of 'working poor', minimum wages are perceived to have adverse employment effects. Administered wages that lay above the market clearing level cause unemployment exactly among those groups they actually attempt to protect, namely those with low productivity (Stigler, 1946). The disemployment effects therefore mostly hit young people who have no or little work experience, and to a lesser extent the lower-educated and women. Moreover, it has been argued that minimum wage increases raise the average wage and compress the wage structure through spillover effects for those closely above the new minimum wage. Wage compression, in turn, is regarded as an impediment to structural change since it lowers the incentives for intersectoral mo-

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<sup>4</sup> Statutory minimum wages are not the only source of wage floors. Non-employment benefits that create a 'poverty-trap' and collective agreements setting de facto minimum wages without legislative regulation can have the same effects. Evidence for this is the existence of wage floors in the absence of statutory minimum wages in Germany and Australia (OECD, 1994).

bility and the acquisition of new skills. In particular with regards to export-led development strategies, this argument has been an important factor in inducing governments in developing countries to lower the statutory minimum wage (Standing, 1991; 1999; Saget, 2001).

From the neo-institutionalist perspective, however, the employment effects of statutory minimum wages are by far less clear cut and temporary high unemployment is regarded as the side-effect of the overall beneficial process of restructuring. As will be shown, this notion directly follows from the neo-institutionalist assumptions that, first, worker productivity is an endogenous variable, and second, that labour markets can be imperfect in certain instances.

First, it has been argued that higher wages can raise productivity.<sup>5</sup> At a very basic level the efficiency wage argument postulates that the productivity of workers increases with higher living standards, i.e. workers who can afford adequate food, housing, education etc. also have a higher productive potential. Likewise, efficiency wages help overcome principal-agent-problems in the employment relationship by giving incentives to employees for exercising effort (see e.g. Akerlof and Yellen, 1986). Hence, minimum wages that exceed the neo-classical market-clearing level do not increase unemployment as long as they are below the efficiency wage and can even increase employment in the short run.<sup>6</sup> By the same token, the efficiency wage theory implies that unemployment can have endogenous reasons and thus occur independently from any regulation. The same holds true for ‘rent-sharing’ under imperfect competition in product markets (OECD, 1994).

From a dynamic perspective, proponents of the minimum wage contend that it enhances productivity by inducing technological change and investment in human capital. First, minimum wages are thought to push producers ‘upmarket’ towards more sophisticated production and innovation strategies by foreclosing

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<sup>5</sup> A positive correlation between real wages and productivity also follows from neoclassical assumptions. The difference, however, is in causality: while neo-classical theory takes higher productivity as a ‘justification’ for higher wages, the neo-institutionalist view contends that the causality can also be the other way round.

<sup>6</sup> In the efficiency wage model by Rebitzer and Taylor (1995) minimum wages even increase employment in the short term, although the long-term effects are theoretically ambiguous.

price competition via low wages (Piore, 1989). In EU accession countries, the reverse direction of causality is also plausible: the prospect of access to EU consumer markets may have spurred efforts to improve product quality resulting in training and higher wages for insiders. Second, it has been argued that minimum wages spur employers to provide low-productivity workers with training whereas lowering wages causes the unskilled to remain unskilled (Standing, 1991). Minimum wage increases would therefore have a neutral or even positive employment effect (for theoretical models see e.g. Cubitt and Hargraeves-Heap, 1996; Acemoglu and Pischke, 1998).

Second, it has been argued that if labour markets are imperfect, wage increases will be conducive to employment. At the microeconomic level, monopsony models imply that minimum wages have a positive effect on employment (Card and Krueger, 1995). Firms have monopsonistic power if labour mobility is sufficiently low so that they are the single buyer of labour in the market. Because profit-maximising firms are likely to set the wage below the Pareto-optimal level, the introduction of a minimum wage would increase employment unless the minimum wage exceeds the market wage. Since geographical labour mobility is relatively low in CEE, among others due to problems in the housing market and public transport, this argument is of particular relevance for transition countries.

Correspondingly, at the macroeconomic level unemployment can be caused by a lack of aggregate demand, i.e. unemployment can be 'Keynesian' instead of 'classical' in character. In particular this is likely to occur if restructuring leads primarily to labour-saving technological progress, which is a plausible assumption for CEECs. Besides having direct effects on employment, restructuring could also yield a lack of domestic demand by downward pressure on wages and hence lowering consumption demand. From this perspective, rising wages are seen as necessary for sustained economic growth and minimum wages as a means to preempt 'Keynesian' unemployment by preventing domestic demand to fall below a certain level (Standing, 1991).

The empirical evidence on the employment effects of minimum wages is to a great extent inconclusive. Since the effects depend on whether minimum wages

actually 'bite', i.e. if they really push wage beyond the market-clearing level (or better the efficiency-wage level), the evaluation is rather an empirical than a theoretical matter. In the 1990s, a fast growing body of empirical studies has developed with contradictory results (for an overview see OECD, 1998). While some authors find negative employment effects, others find that these effects are insignificant or even positive. These differences can partly be explained by the different approaches used, mainly time-series, pooled, cross-sectional or event studies. Nevertheless, the majority of studies finds that effects, whether positive or negative, are rather small. Moreover, there is growing consensus that employment effects are negative at high levels of statutory minimum wages and that young people are most susceptible to disemployment effects.

To conclude, the neo-classical and the neo-institutionalist view differ in their assumptions and hence arrive at different conclusions about the nature and causality of unemployment. The former regards unemployment to be caused by exogenous constraints on labour market flexibility. It appears therefore often to be the consequence of a dilemma between economic necessities and political feasibility. The latter, in turn, regards market imperfections and structural adjustment as the main origin of unemployment. Moreover, while the former prefers to avoid employment reductions at the expense of wage flexibility and higher inequality, the latter favours to avoid real wage cuts and regards the emergence of open unemployment as the side-effect of the overall beneficial process of restructuring. Consequently, both strands would suggest different policy advice for the CEECs: while neo-classical advice would typically call for 'deregulation' and flexible wages, neo-institutionalists would normally advocate active labour market policies in order to upgrade skills. In the light of this debate, the next section provides some preliminary evidence on regulations and labour market performance in CEE by contrasting them with the EU and the US.

### **3 Regulations and Labour Market Performance in CEE**

Laying the ground for the statistical analysis in section three, this section outlines and contrasts the regulations and labour market trends in CEE. First, the strictness of EPL and the level of minimum wages is compared to international standards. Second, as for the contention that regulations cause unemployment via wage pressure and wage inflexibility, the development of the most important macroeconomic aggregates that affect labour market outcomes – real GDP growth, the level of employment and real wages – is depicted. Finally, referring to the notion that regulations affect the persistence and composition of unemployment, this section presents figures on labour mobility, long-term and youth unemployment.

#### **3.1 CEE Labour Market Regulations in International Perspective**

Employment protection legislation has remarkably converged towards EU standards, as Riboud et al. (2002) note. Rules and laws that govern the dismissal of workers by employers usually aim at protecting the former against unfair, i.e. arbitrary, actions and at lessening the costs of labour adjustment by defining the ‘just cause’ for dismissals and prescribing notice periods and severance payments. The indicators presented in table 1 follow the methodology developed by the OECD (1999). The overall indicator of EPL strictness is composed by three subindices measuring the strictness of legislation on permanent contracts, temporary contracts and collective dismissals. As the table shows, indices of the strictness of EPL in CEE rank in the middle of the flexibility scale of the Continental European benchmark but remain distinct from the U.S. and the U.K. The average overall strictness of employment protection legislation in the Eastern EU accession countries equals the EU average of 2.4. However, transition countries do not represent a monolithic group. There is considerable variance between countries with Hungary having the most liberal and Slovenia the most strict employment protection laws. Despite being the fourth liberal country in the enlarged EU sample, the gap between Hungary and the Anglo-Saxon countries (e.g. the U.S., the U.K. and Ireland) remains significant. Slovenia, on the contrary, is quite close to Portugal which has the most strict regulation in the EU-15. Moreover, table 1 shows that transition countries tend to be more lenient in



**Table 1: Employment Protection Legislation in Selected Countries**

Country	Regular employment legislation	Temporary employment legislation	Collective dismissals legislation	Overall EPL strictness		
				Index <sup>1)</sup>	Rank within Group	Rank within sample
Transition countries						
Bulgaria	2.3	2.5	4.8	2.8	6	16
Czech Republic	2.8	0.5	4.3	2.1	3	7
Estonia	3.1	1.4	4.1	2.6	5	14
Hungary	2.1	0.6	3.4	1.7	1	4
Poland	2.2	1.0	3.9	2.0	2	5
Slovak Republic	2.6	1.4	4.4	2.4	4	10
Slovenia <sup>2)</sup>	3.4	2.4	4.8	3.5	7	20
EU-15 <sup>3)</sup>						
Austria	2.6	1.8	3.3	2.3	6	9
Belgium	1.5	2.8	4.1	2.5	7	11
Denmark	1.6	0.9	3.1	1.5	3	3
Finland	2.1	1.9	2.4	2.1	4	7
France	2.3	3.6	2.1	2.8	10	16
Germany	2.8	2.3	3.1	2.6	9	14
Greece	2.4	4.8	3.3	3.5	13	20
Ireland	1.6	0.3	2.1	1.1	2	2
Italy	2.8	3.8	4.1	3.4	12	18
Netherlands	3.1	1.2	2.8	2.2	5	8
Portugal	4.3	3.0	3.6	3.7	14	21
Spain	2.6	3.5	3.1	3.1	11	17
Sweden	2.8	1.6	4.5	2.6	9	14
United Kingdom	0.8	0.3	2.9	0.9	1	1
Transition average	2.6	1.4	4.2	2.4		
EU-15 average <sup>3)</sup>	2.3	2.3	3.0	2.4		
United Staates	0.2	0.3	2.9	0.7		

Note:

<sup>1)</sup> Weighted average index for regular employment, temporary employment and collective dismissals

<sup>2)</sup> Until 1999

<sup>3)</sup> Without Luxembourg

Source: OECD (1999), Ribaud et al. (2002), Cazes and Nesporova (2002).

respect of temporary employment than the EU-15 average, whereas permanent contracts and collective dismissals are regulated more firmly. In short, the CEECs as a group are closer to Continental European than to Anglo-Saxon countries although there is significant variance among them.

Furthermore, minimum wages have significantly declined in all countries except for Poland and Lithuania and are rather low compared to international standards. Under Socialism, the statutory minimum wage was an integral part of the central wage fixing-system being relatively close to the average wage. As documented in table 2, the ratio between minimum and average wage fell across the region, except for Poland and Lithuania where it was low at the onset of

**Table 2: Development of Statutory Minimum Wages in CEE**

Statutory Minimum Wages in Percent of Gross Average Wages											
Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	Average, 1993-1998	Change, 1990-1998
Bulgaria	43.1	54.2	35.9	38.3	35.7	32.6	27.4	23.9	24.6	30.4	-18.5
Czech Rep.	-	52.7	47.4	37.8	31.9	26.9	25.8	23.4	22.7	28.1	-30.0
Estonia	-	-	80.2	40.8	27.5	33.6	44.0	23.7	26.3	32.7	-53.9
Hungary	37.3	39.0	35.9	30.7	30.9	31.4	31.0	30.4	-	30.9	-6.9
Lithuania	-	-	-	19.7	17.4	28.1	38.6	47.6	41.4	32.1	21.7
Poland	17.9	28.9	31.3	41.0	41.0	41.3	40.5	40.0	-	40.7	22.2
Romania	57.2	47.4	36.7	43.1	24.9	20.0	-	-	-	29.3	-37.2
Slovak Rep.	-	53.1	48.4	45.5	38.9	34.1	33.1	29.3	30.0	35.2	-23.1

- not available

Source: Vaughan-Whitehead (1998); European Training Foundation (1999), Background Studies on Employment and Labour Market

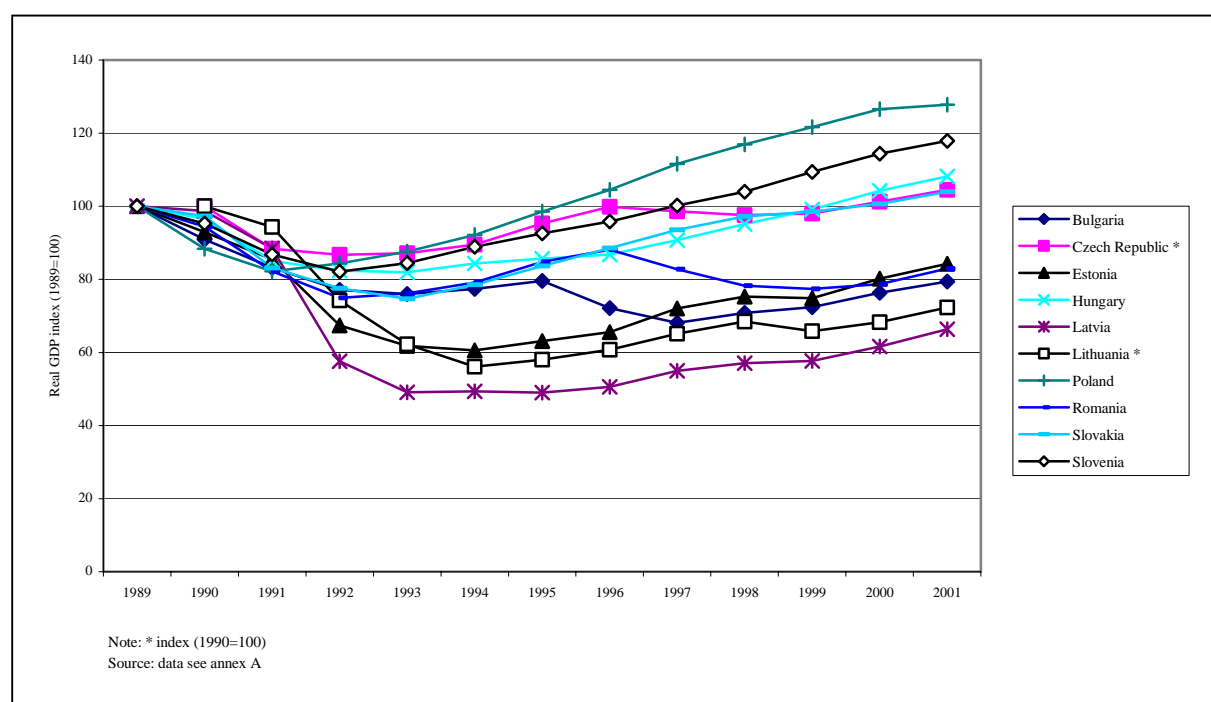
transition but followed a positive trend. Moreover, the erosion of minimum wages went along with real wage declines, so that the fall was even more pronounced in absolute terms. In many countries the minimum wage fell below the official subsistence minimum and lost its social function as a protection against poverty. The overall negative trend has been brought about by the suspension of adjustment to inflation in the context of macroeconomic stabilisation. Since the minimum wage functioned in most countries also as the basis for social benefits and the wage structure in the public sector, non-adjustment has been used as a 'crude means of limiting social expenditure' (Vaughan-Whitehead, 1998: 13). In Poland, the case was different, yet, since this connection did not exist and the minimum wage was adjusted regularly. In most OECD countries, minimum wages are not imposed by regulation but follow from collective bargaining (e.g. Germany, Italy, Denmark). In 1990, minimum wages in Spain, Canada, the U.S., New Zealand, France and the Netherlands ranged – in ascending order – between 35 and 55 percent of the average wage (OECD, 1994: 48). The CEECs are below or at the bottom of this scale.

### 3.2 Jobless Growth and Rising Real Wages

Despite the apparent diversity of transition paths, CEECs also have some trends in common as regards the trajectories of output, employment and real wage growth. First, GDP growth varies considerably between the frontrunners and the laggards of economic reform. Figure 1 shows the trajectories of real GDP

growth for the ten CEECs, whereby real GDP is indexed to the pre-transition level. So far, the frontrunners of economic reform, the Visegrad four and Slovenia, have succeeded in surpassing their pre-transition levels of real GDP. The initial output losses were between 14 percent (Czech Republic) and 25 percent (Slovakia) and real GDP growth has resumed until 1993.<sup>7</sup> In the Baltics the initial slump was deeper (40-50 percent) and more protracted so that growth resumed later and from a lower basis but since 1999 at a more or less similar pace. Romania and Bulgaria, however, followed the path of the Visegrad four until the recessions of 1996 and 1997 brought about a further net decline and shifted their growth path closer to that of the Baltics. Within the Visegrad four, the Czech Republic is a special case: the initial slump was low and growth resumed fast until a financial crisis triggered a second recession in 1996.<sup>8</sup> In sum, despite the apparent variance in timing and pace, all CEECs have surpassed the turning point and embarked on a growth path.

**Figure 1: Real GDP Growth in CEE**

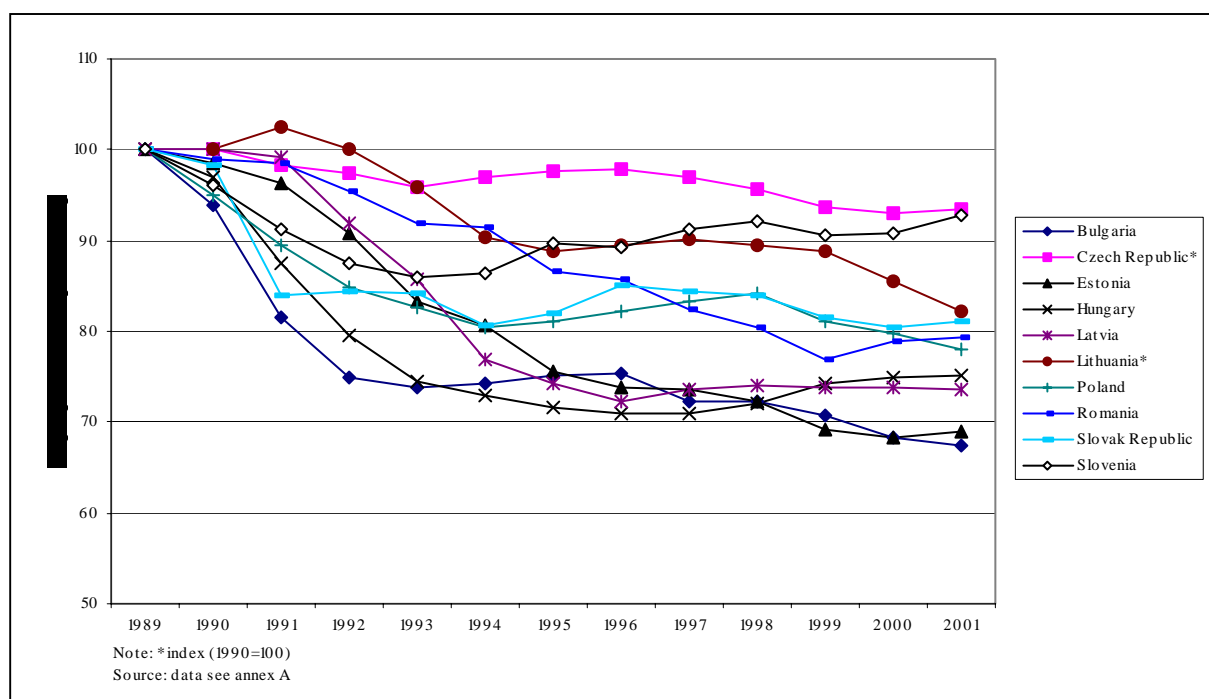


<sup>7</sup> Until 1993 the Czech lands and Slovakia were both part of the former Czechoslovakia. The numbers given here, however, refer to each region separately.

<sup>8</sup> The Czech exceptionalism can be explained by the delay of restructuring in the early transition. Lax lending policies by state-owned banks led to a form of “bank socialism” under which firms enjoyed soft budget constraints and kept on hoarding labour (for a detailed discussion see e.g. Vecernik, 2001).

Second, the initial output decline was generally accompanied by sharp employment reductions; the subsequent recovery of economic growth, however, has not necessarily translated into substantive employment gains. In figure 2, total employment indexed to the 1989 level is measured on the vertical axis. In most countries employment fell dramatically to 70 to 80 percent of the pre-transition level. Only in the Czech Republic and Slovenia employment is remarkably higher at the 90 percent level. Whereas the Czechs could maintain high employment through soft budget constraints until 1996, Slovenia is the only country that managed to create substantial net employment growth after the initial slump. In all other countries, employment still tends either to fall or stagnate. Surprisingly, even the reform frontrunners suffer from ‘jobless growth’, i.e. stagnating employment despite high GDP growth.

**Figure 2: Employment Levels in CEE**



Despite the dramatic fall in employment, however, one should not forget that the employment level under Socialism was extraordinarily high. Table 3 shows that during the last twenty years labour force participation in CEE converged from levels that were even higher than in the U.S. towards the EU level which is significantly lower. With participation rates around 70 percent, most CEECs rank well in the middle of the EU benchmark. Only Bulgaria and Hun-

gary, where the rate was about 60 percent in 2000, have equally low levels as the South European countries.<sup>9</sup> Since employment is also affected by individual preferences, it is likely that the equilibrium employment level lies below the pre-transition level. First, under Socialism, work was not only guaranteed but also an obligation, so that employment reductions may partly be voluntary. Second, female participation might have been reduced due to cultural factors or a lack of adequate (and affordable) child care facilities. Third, longer educational attainments delay the entering of the youth into the labour force. Nevertheless, it cannot be excluded that withdrawals from the labour force are also induced by bleak job prospects, i.e. caused by sluggish labour demand (Cazes and Nesporova, 2001).

Moreover, employment-to-population ratios are now extremely low, i.e. below 60 percent, in Bulgaria, Hungary, Poland, the Slovak Republic and Latvia while they are close to or even still above the EU average in Estonia, Slovenia, Lithuania, the Czech Republic and Romania. Compared with EU countries and the U.S., employment rates are closer to the EU than the U.S. level although the variance within CEE is larger than for participation rates. A comparison between employment and economic activity rates shows that employment reductions apparently translated into high unemployment in Poland and the Slovak Republic while they translated into high inactivity in Hungary and Bulgaria (in the latter two cases both rates are extremely low). In sum, high economic growth is no guarantee for employment gains in CEE. A part of the explanation for the prevalence of 'jobless growth' may be the 'normalisation' of employment levels towards West European patterns.

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<sup>9</sup> E.g., Italy and Greece, where female participation is low for cultural reasons, had labour force participation rates of 60.3 and 63 percent, respectively, in 2000 (OECD, 2002). Nevertheless, low levels in CEE have other reasons, e.g. the use of early retirement schemes and the unofficial economy have been prevalent particularly in Hungary (Johnson, Kaufmann and Shleifer, 1997; Horváth, Ábrahám, Horváth and Köpeczi-Bócz, 1999).

**Table 3: Employment and Participation Rates in CEE**

Country	Employment-to-population ratio <sup>1)</sup>					Labour force participation rate <sup>2)</sup>		
	1996	1997	1998	1999	2000	1980	1990	2000
Bulgaria	55.3	54.7	54.2	51.7	50.4	76.6	75.0	61.0
Czech Republic	69.5	68.9	67.6	66.0	65.1	79.9	78.1	71.7
Estonia	64.2	64.9	65.3	62.0	61.0	82.0	79.4	70.8
Hungary	53.0	53.0	54.2	55.6	55.6	73.2	68.6	59.5
Latvia	55.9	58.5	58.7	59.5	58.0	81.1	79.4	69.2
Lithuania	60.3	63.1	62.9	64.0	60.0	78.7	76.0	72.2
Poland	60.4	58.8	58.9	57.5	55.0	75.9	72.5	67.5
Romania	71.3	72.0	70.8	70.4	69.1	76.3	68.5	74.8
Slovak Republic	62.1	61.0	60.3	57.9	57.6	76.4	78.3	71.1
Slovenia	63.0	65.7	65.1	63.9	64.1	74.4	70.8	69.1
Transition average	61.5	62.1	61.8	60.9	59.6	77.5	74.7	68.7
EU average	60.3	60.7	61.0	62.1	63.8	-	67.4	69.6
OECD average	64.5	65.0	65.2	65.5	65.8	-	69.4	70.2
United States	72.9	73.5	73.8	73.9	74.1	72.5	76.5	77.2

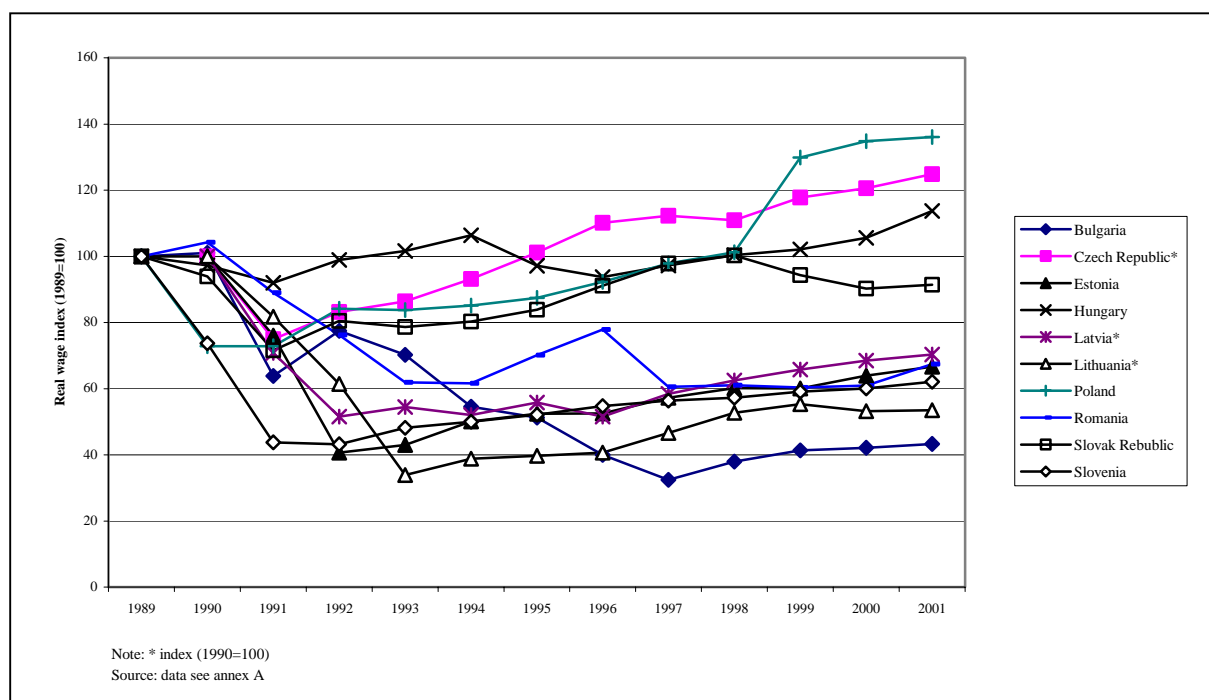
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Note: <sup>1)</sup> Employment rates are defined as the share of employed persons in the working age population (ages 15-64). <sup>2)</sup> Economic activity rates are defined as the share of the labour force in the working-age population (ages 15-64).

Sources: Vidovic (2002); ILO Key Indicators of the Labour Market database; OECD Employment Outlook 2002; OECD (2003)

Third, real wages fell less and resumed to grow earlier and at a higher pace in the Visegrad four than in other CEECs. Rampant inflation and income policies aimed at containing the wage-price spirale led to an initial decline in real wages in all countries. However, as figure 3 shows, the cutback was less pronounced in the Visegrad four, where real wages fell by 8 percent (Hungary) to 30 percent (Poland). The drop was even sharper in the other CEECs where real wages declined between 40 percent (Romania) and almost 70 percent (Bulgaria). Hungary is a special case in this respect since real wages show a considerable degree of volatility but a stagnating trend from the early transition on. Another exception is Slovenia, where real wage cuts amounted to almost 60 percent in 1991 although the output collapse was less sharp than in the Baltics. Moreover, in all countries, except for Bulgaria, real wage growth resumed after the initial decline. However, real wages recovered earlier and at a higher pace in the Czech Republic, Poland and Slovakia than in the other CEEC.

**Figure 3: Real Wage growth in CEE**



Along the same lines, the earnings distribution has widened considerably, yet not exorbitantly. As demonstrated in table 4, the Gini coefficient for the distribution of earnings has increased in the CEECs by six to ten points between 1989 and 1999. Romania is an outlier in this respect with an increase by over twenty points. In international comparison, earnings inequality is higher than in most EU member states but still does not reach the U.S. level. The decile ratio, the ratio of the highest to the lowest decile of the earnings distribution, ranges between 3.0 in the Czech Republic and 5.0 in Romania. In the European Union, most countries have ratios between 2.5 and 3.0; the most inequal countries, the U.K. and Austria, score 3.5 (Rutkowski, 2001:5). Yet, only Romania comes close to the U.S. level of 5.5 and earnings inequalities are not as exorbitant as in developing countries or the CIS. As Rutkowski notes, inequality is high by European but not by world standards. In addition, the differentiation of earnings seems to be driven by the need to make wages more rational, i.e. to adjust them to productivity. As several studies have reported, the increasing wage dispersion in CEE to a great extent reflects returns to education and experience as well as differences between sectors and gender (Rutkowski, 1996; Orazem and Vodopivec, 1997; Boeri and Flinn, 1999; Rutkowski, 2001). In short, while wages

**Table 4: Earnings Inequality in CEE**

Country	Gini coefficients for the distribution of earnings												Decile ratio (P90/P10), 1999
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average, 1993-99	
Bulgaria	-	0.21	0.26	-	0.25	-	-	0.29	-	-	-	0.27	3.6
Czech Rep.	0.20	-	0.21	0.21	0.26	0.26	0.28	0.25	0.26	0.26	0.26	0.26	3.0
Estonia	0.25	-	-	-	-	-	-	-	0.34	0.38	-	0.36	-
Hungary	0.27	0.29	-	0.30	0.32	0.32	-	-	0.35	-	-	0.33	4.2
Poland	0.21	-	0.24	0.25	0.26	0.28	0.29	0.30	0.30	0.29	0.31	0.29	3.5
Latvia	0.24	-	0.25	0.33	0.28	0.33	0.35	0.35	0.34	0.33	0.33	0.33	4.3
Lithuania	0.26	-	-	0.37	-	0.39	0.37	0.35	0.35	0.36	0.37	0.36	4.6
Romania	0.15	-	0.20	-	0.23	0.28	0.29	0.31	0.35	0.36	0.37	0.31	5.0
Slovenia	0.22	0.23	0.27	0.26	0.28	0.28	0.36	0.30	0.31	0.31	0.31	0.30	3.3
- not available													
Note: Gini coefficients refer to monthly earnings with bonuses as reported by employers													
Sources: UNICEF Transmonee database; Rutkowski (2001)													

have resumed to grow, they have also become more differentiated and more rational.

### 3.3 Labour Mobility and the Duration and Composition of Unemployment

As outlined in section one, it has been argued that EPL slows down labour mobility and thereby causes long-term unemployment. Minimum wages are perceived to have disemployment effects among the low-skilled, in particular the youth. This section hence outlines the development of labour turnover, job tenure and long-term and youth unemployment, albeit within the constraints of limited data availability.

First, although all transition countries naturally necessitate a greater level of labour mobility because of the challenges of restructuring, labour turnover varies significantly across the region. Labour turnover is defined as the sum of accession and separation rates, i.e. the ratio of hirings and lay-offs to total employment, and is commonly used as an indicator for labour mobility. As table 5 reports, average labour turnover ranged from 30 percent in the Czech Republic and Slovenia to 50 percent in Bulgaria between 1993 and 1999, which is relatively high compared to the OECD countries where labour turnover ranges between 25 and 40 percent. Yet, labour flows seem to be driven by different forces than in industrialised countries. As Cazes and Nesporova (2001) point out, labour turnover is normally procyclical, since economic growth fosters job creation and



better employment prospects encourage workers to change jobs voluntarily in order to improve their income position. In transition economies, however, labour turnover tends to be countercyclical which Cazes and Nesporova interpret as a sign that the perception of high job insecurity makes workers cautious about job changes.

Another way of looking at labour mobility is average job tenure. As table 5 reports, average tenure rates were significantly higher in Slovenia and Poland than in the Czech Republic, Hungary and Estonia between 1993 and 1999. By international standards, the former two are close to the upper end (12 years) and the latter are close to the lower end (7 years) of average tenure rates among OECD countries. However, job tenure is with roughly 2 years equally low for youth employment (ages 14-25) but differs noticeably for workers with ages of 45 and more (Cazes and Nesporova, 2001:312). The figure for Estonia (10.1 years) is even below the level of the U.S. (11 years) and the figure for Slovenia (20.8 years) exceeds the average of advanced industrialised countries (18 years). According to Cazes and Nesporova, the high job tenure rates in Poland and Slovenia hint at labour market segmentation in these countries so that the costs of labour adjustments are borne by a group of marginalised workers whereas the group of core workers enjoys relative employment stability. Regarding Slovenia, this view is supported by the relatively high share of temporary workers in total employment, which amounted to 11 percent in 1999. Compared to the EU, where the share is about 15 percent, this figure is still rather low. It is possible, however, that the true amount of temporary employment is vastly understated due to data limitations (Ibid: 321).

**Table 5: Labour Market Dynamics in Selected Countries**

A. Labour Turnover											
Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Average, 1993-1999 <sup>1)</sup>
Accession rates											
Bulgaria	20.00	14.70	12.60	15.40	18.10	20.90	21.30	27.40	26.00	27.60	22.39
Czech Rep.	-	-	-	22.60	18.60	14.50	12.20	12.60	10.50	-	15.17
Estonia	14.90	18.00	23.00	25.60	27.60	15.80	20.80	17.70	16.00	-	20.58
Poland	-	-	16.40	22.80	28.50	25.60	28.50	21.90	21.20	21.20	24.24
Slovenia	9.60	11.80	12.50	14.10	15.30	14.50	14.80	14.30	14.60	16.60	14.89
Separation rates											
Bulgaria	28.90	36.20	31.10	29.60	25.80	22.50	24.80	31.90	29.80	39.90	29.19
Czech Rep.	-	-	-	22.00	17.50	15.80	12.60	12.20	11.80	-	15.32
Estonia	15.90	20.40	31.40	30.00	27.70	16.20	22.10	18.50	19.00	-	22.25
Poland	-	-	-	19.30	21.20	25.70	21.50	24.90	18.70	17.00	21.19
Slovenia	17.50	22.40	19.10	18.10	16.70	16.90	16.40	15.00	14.20	14.50	15.97
Labour turnover											
Bulgaria	48.90	50.90	43.70	45.00	43.90	43.40	46.10	59.30	55.80	67.50	51.57
Czech Rep.	-	-	-	44.60	36.10	30.30	24.80	24.80	22.30	-	30.48
Estonia	30.80	38.40	54.40	55.60	55.30	32.00	42.90	36.20	35.00	-	42.83
Poland	-	-	-	35.70	44.00	54.20	47.10	53.40	40.60	38.20	44.74
Slovenia	27.10	34.20	31.60	32.20	32.00	31.40	31.20	29.30	28.80	31.10	30.86
Net employment change											
Bulgaria	-8.90	-21.50	-18.50	-14.20	-7.70	-1.60	-3.50	-4.50	-3.80	-12.30	-6.80
Czech Rep.	-	-	-	0.60	1.10	-1.30	-0.40	0.40	-1.30	-	-0.15
Estonia	-1.00	-2.40	-8.40	-4.40	-0.10	-0.40	-1.30	-0.80	-3.00	-	-1.67
Poland	-	-	-	-2.90	1.60	2.80	4.10	3.60	3.20	4.20	2.37
Slovenia	-7.90	-10.60	-6.60	-4.00	-1.40	-2.40	-1.60	-0.70	0.40	2.10	-1.09

**B. Average Job Tenure**

Country	1993	1994	1995	1996	1997	1998	1999	Average, 1993-1999 <sup>1)</sup>
Czech Rep.	8.4	8.1	8.3	8.4	8.5	8.2	8.2	8.3
Estonia	-	-	-	-	7.1	7	6.9	7.0
Hungary	-	-	-	-	8.3	8.6	8.8	8.6
Lithuania	-	-	-	-	-	7.7	7.6	7.7
Poland	-	-	11.5	11.1	11.4	11.5	11.9	11.5
Slovenia	12.6	12.6	12.3	12.2	12	12.4	12.1	12.3

**C. Share of Temporary Employment**

Country	1992	1994	1996	1998	1999	Average, 1992-1999 <sup>1)</sup>
Czech Republi ...		7.1	7.6	6.1	6.9	6.9
Estonia	4.2	6.3	4.8	4.4	...	4.9
Hungary	...	...	...	...	5.9	5.9
Poland		5.4	5.8	5.3	5.8	5.6
Slovenia	...	8.3	8.8	12	11	10.0

- not available

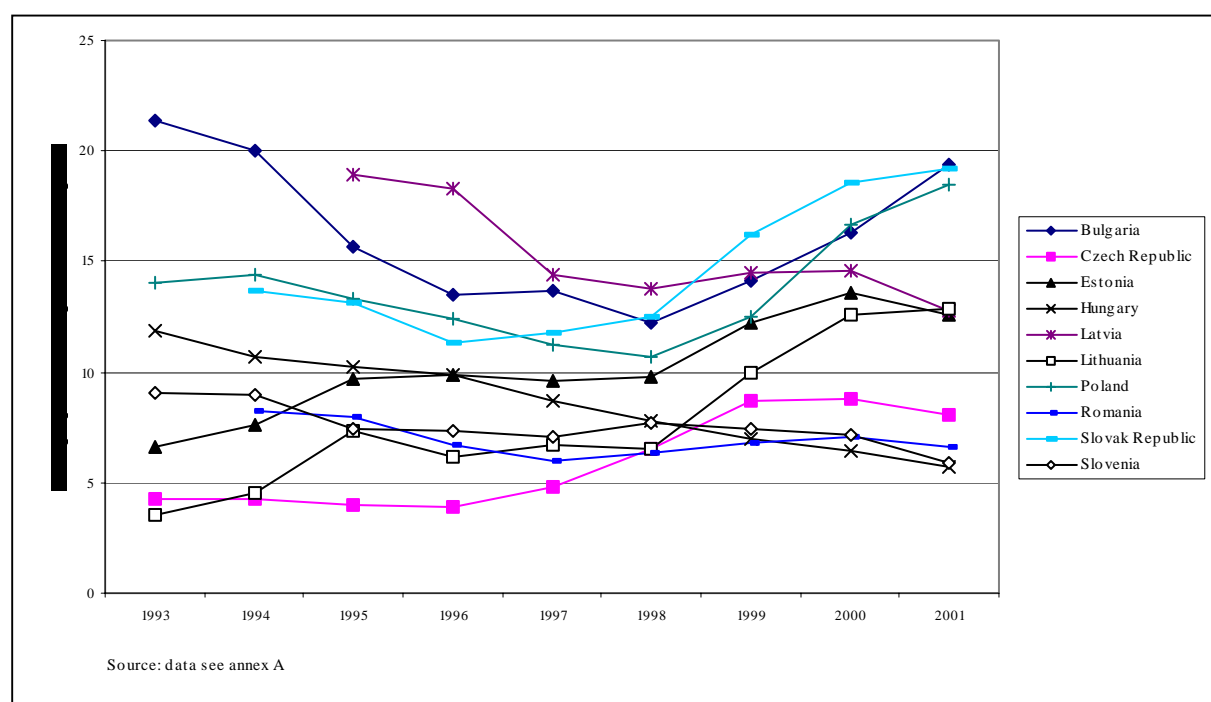
Note: <sup>1)</sup> Only as far as data are available in this table.

Sources: Cazes and Nesporova (2001)

Second, although the overall employment trend has been almost uniformly negative, the pattern of unemployment is surprisingly diverse with respect to

level, persistence and composition. Unfortunately, the data on comparable unemployment rates in this early phase of transition are very limited since labour force surveys following international standards have been carried out only since 1993 in most countries.<sup>10</sup> The figures for registered unemployment, however, rose to double digit levels in all countries except for the Czech Republic and Lithuania (see Annex A). Surprisingly, the further development of unemployment rates does not seem to be related to the overall economic performance in terms of GDP growth. Comparing the unemployment paths in figure 4, one can identify three patterns. First, Hungary, Romania and Latvia were successful in bringing their unemployment rates down until 2001 compared to their peak levels in early transition. Second, the Czech Republic, Estonia and Lithuania experienced a rise in unemployment. Finally, Bulgaria, Poland and the Slovak Republic saw unemployment resuming in the late 1990s, after they had already achieved some substantial improvements. The cases of Latvia and Romania show that it is appar-

**Figure 4: ILO Unemployment Rates in CEE**



<sup>10</sup> The ILO defines unemployment as the share of actual job seekers in the total labour force. The ILO unemployment rate may deviate considerably from the official unemployment rate since eligibility criteria for unemployment and social benefits encourage persons to register as unemployed although they are actually not seeking employment or are working in the unofficial sector. On the other hand, official unemployment rates may understate the true dimension of unemployment due to different accounting methods, e.g. persons in active labour market programmes are not counted as unemployed.

**Table 6: Long-term and youth unemployment in CEE**

<b>A. Long-term unemployment (percentage of total unemployment)</b>									
Country	1994	1995	1996	1997	1998	1999	2000	2001	Average, 1994-2001 <sup>1)</sup>
Bulgaria	-	-	-	60.4	59.1	56.8	58.2	-	58.6
Czech Republic	21.6	30.6	31.6	30.5	31.2	37.1	48.8	52.7	35.5
Estonia	39.5	31.9	55.3	45.8	47.0	45.8	44.4	48.0	44.7
Hungary	41.3	50.6	54.4	51.3	49.8	49.5	48.9	46.7	49.1
Latvia	-	-	-	63.0	-	58.0	58.0	57.0	59.0
Lithuania	-	-	-	69.0	29.7	39.0	52.0	58.0	49.5
Poland	40.4	40.0	39.0	38.0	37.4	34.8	37.9	43.1	38.8
Romania	-	-	51.3	47.7	41.9	44.3	51.5	-	47.3
Slovakia	41.6	53.1	51.6	50.3	51.3	47.7	54.6	48.2	49.8
Slovenia	75.0	75.5	52.2	56.7	57.7	57.7	62.4	-	62.5
Transition average	43.2	47.0	47.9	51.3	45.0	47.1	51.7	50.5	48.0
EU average	48.1	50.1	49.3	50.2	49.2	47.4	46.9	43.7	48.1
OECD average	35.2	33.8	34.0	32.7	33.4	31.8	31.6	27.5	32.5
United States	12.2	9.7	9.5	8.7	8.0	6.8	6.0	6.1	8.4
<b>B. Youth unemployment (percentage of labour force ages 15-64)</b>									
Country	1994	1995	1996	1997	1998	1999	2000	Average, 1994- 2000	Change, 1994-2000
Bulgaria	44.9	37.7	33.5	36.0	36.0	33.8	35.3	36.7	-9.6
Czech Republic	8.7	7.8	7.2	8.6	12.4	17.0	17.0	11.2	8.3
Estonia	11.6	14.1	16.0	14.4	15.7	19.8	23.9	16.5	12.3
Hungary	19.4	18.6	18.0	15.9	13.5	12.4	12.1	15.7	-7.3
Latvia	-	30.1	29.0	24.9	25.5	-	-	27.4	-4.6
Lithuania	32.1	31.6	27.4	25.2	22.2	26.5	-	27.5	-5.6
Poland	32.5	31.2	28.5	24.8	23.2	30.0	35.2	29.3	2.7
Romania	22.5	20.6	20.2	18.0	18.3	18.8	18.6	19.6	-3.9
Slovak Republic	27.3	24.8	20.9	21.7	23.6	32.1	35.2	26.5	7.9
Slovenia	22.2	18.8	18.8	17.6	18.6	18.1	16.8	18.7	-5.4
Transition average	24.6	23.5	22.0	20.7	20.9	23.2	24.3	22.9	-0.3
EU average	21.2	20.6	21.0	20.4	18.5	17.3	15.4	21.5	-5.8
OECD average	14.3	14.1	13.9	13.4	12.8	12.5	11.8	22.6	-2.5
United States	12.5	12.1	12.0	11.3	10.4	9.9	9.3	23.2	-3.2
- not available									
Note: <sup>1)</sup> only for those years for which data are available.									
Sources: OECD Employment Outlook 1998 and 2002, Riboud (2002), Vidovic (2002), OECD (2003).									

ently possible to contain unemployment even under less favourable overall macroeconomic conditions. The case of Poland, on the contrary, illustrates that rapid growth is no guarantee for getting buoying unemployment under control.

Moreover, unemployment in transition tends to be long-term and hits the low-skilled, in particular young people. First, the share of long-term unemploy-

ment in total unemployment has been increasing in all countries represented in table 6. However, there is significant variance between countries in the region. The share was lowest in Poland with 43 percent in 2001, which equals the EU average, and was 62 percent in Slovenia in 2000, which is close to Italy, the country with the highest share of long-term unemployment in Europe. Second, youth unemployment is higher than total unemployment in all countries but follows diverging trajectories. The level varies between 12.1 percent in Hungary, which is below the EU average, and 35 percent in Bulgaria, Poland and the Slovak Republic, which is even beyond the level of Italy (29.7), the worst performing EU country. Nevertheless, rates have been falling between 1994 and 2000 in all countries except for the Czech Republic, Estonia, Poland and the Slovak Republic, which puts additional strain on the latter.

In conclusion, the strictness of labour market regulations appears to be ambiguous. While employment protection converges towards the rather strict European standards, minimum wages have eroded in most CEECs and are now close or even below the U.S. level. However, CEECs tend to be more lenient in respect of temporary than permanent contracts which is contrary to European practice. Employment and GDP growth do not seem to be strongly related and ‘jobless growth’ has become a prevalent phenomenon even among the transition frontrunners. Part of the explanation may be the ‘normalisation’ of participation rates and the resumption of real wage growth. The latter, however, have also become more differentiated and rational. Although labour mobility is relatively high throughout the region, some countries also show high average job tenure rates and a large share of temporary employment, which hints at labour market segmentation. Apparently, unemployment trends are not related to overall economic performance and long-term and youth unemployment have become pressing problems in most countries. How far labour market regulations can account for these trends is examined in the next section.

#### **4 How Far Can Regulations Explain the Variance of Labour Market Performance in CEE?**

Section one has reviewed the ‘Eurosclerosis’ debate about whether wage rigidities arguably caused by (inefficient) regulations and institutions are the

main culprit for high unemployment and slow adjustment to exogenous shocks or not. As demonstrated by the findings of section two, the claim that ‘over-regulation’ is the chief villain for the unemployment crisis in Central and Eastern Europe cannot easily be grounded on a classification of the region into the ‘liberal’ versus ‘corporatist’ pattern: first, because the institutional trend is inconclusive, and second, because CEECs do not represent a monolithic group but show considerable variance. It has therefore to be shown that differences in regulations can account for the variance of outcomes in the region. For this purpose, this section examines the performance of CEE labour markets in two steps. First, it enquires into the key rift between the neoclassical and the neo-institutionalist view if unemployment is driven by wage rigidities at all. Second, it examines if regulations can account for the different trajectories of real wage growth and labour market outcomes across the region.

#### **4.1 Have Real Wages Grown Too Fast?**

The key point in the debate reviewed above is whether flexibility and growth of real wages affect labour market performance. As discussed in section one, the main rift between the opposing approaches concerns the relative importance of real wage adjustment for employment. At the microeconomic level, the question is how responsive labour demand is to real wage changes. At the macroeconomic level, this refers to whether unemployment actually is ‘classical’ or ‘Keynesian’.

As regards the microeconomic level, there is empirical evidence that wages do matter in transition. A recent study conducted by Basu, Estrin and Svejnar (2000b) finds that labour demand of firms has become responsive to both sales and wages during early transition. The study is based on enterprise-level data from the Czech Republic, Hungary, Poland and Slovakia as well as Russia between 1990 and 1993 and reports that labour demand-wage elasticities were significantly negative in the CEECs but not in Russia where firms are found to be unresponsive to changes in wages and sales alike. Although labour demand with respect to wages is found to be inelastic with short-term elasticities ranging between 0.6 and 0.96 in the Czech Republic, Hungary and Poland and about 0.25 in Slovakia, one cannot dismiss the claim that wages do matter for employment in

transition. Moreover, the study also finds evidence that wages became increasingly associated with sales per worker during transition. This 'rent-sharing' between workers and the firm typically hints at insider power and the use of efficiency wages, respectively.

Concerning the macroeconomic level, multivariate regressions show that real wage growth is an important determinant of unemployment in CEE. The analysis is based on average annual changes in the unemployment rate, the employment level, real wages and real GDP between 1993 and 2001. The average Gini coefficient for the earnings distribution is taken as a measure for wage dispersion. The focus on trends instead of levels has the advantage that results are less influenced by differences in initial conditions. The analysis is confined to the period after the initial slump in order to isolate the potentially disturbing effects of the transformational recessions. Similarly, Bulgaria and Romania, each of which experienced a second recession, enter only for 1997-2001 and 1998-2001. As documented in table 7, real wage growth has significantly contributed to unemployment whereas real GDP growth and greater wage dispersion have not helped reducing unemployment rates. By the same token, real wages have a negative effect on employment while the influence of GDP growth and the earnings distribution is statistically insignificant. At first sight, the coefficients for real wage growth are not very large. On average, one percent of real wage growth increases the unemployment rate by 0.27 and lowers employment by 0.31 percentage points. Still, since real wages have grown rapidly in CEE, e.g. by almost 50 percent in Poland during the period examined, the cumulative effects are actually tangible.

**Table 7: Employment Effects of Real Wage Growth and Dispersion: Regression Results**

Dependent variables		Independent variables		
Unemployment rate	Real wages	Real GDP	Earnings distribution	
Coefficient	<b>0.268*</b>	<b>0.017</b>	<b>-2.581</b>	
Standard error	(0.141)	(0.263)	(7.759)	n: 9
T-statistic	1.895	0.065	-0.333	adj. R <sup>2</sup> : 0.086
Coefficient	<b>0.272***</b>	<b>-0.014</b>		
Standard error	(0.108)	(0.205)		n: 10
T-statistic	2.506	-0.067		adj. R <sup>2</sup> : 0.323
Coefficient	<b>0.272***</b>			
Standard error	(0.101)			n: 10
T-statistic	2.678			R <sup>2</sup> : 0.407
Employment	Real wages, trend	Real GDP, trend	Earnings distribution	
Coefficient	<b>-0.355*</b>	<b>0.201</b>	<b>-5.917</b>	
Standard error	(0.206)	(0.383)	(11.293)	n: 9
T-statistic	-1.727	0.525	-0.524	adj. R <sup>2</sup> : 0.032
Coefficient	<b>-0.313**</b>	<b>0.093</b>		
Standard error	(0.163)	(0.308)		n: 10
T-statistic	-1.919	0.300		adj. R <sup>2</sup> : 0.165
Coefficient	<b>-0.313**</b>			
Standard error	(0.154)			n: 10
T-statistic	-2.039			R <sup>2</sup> : 0.260

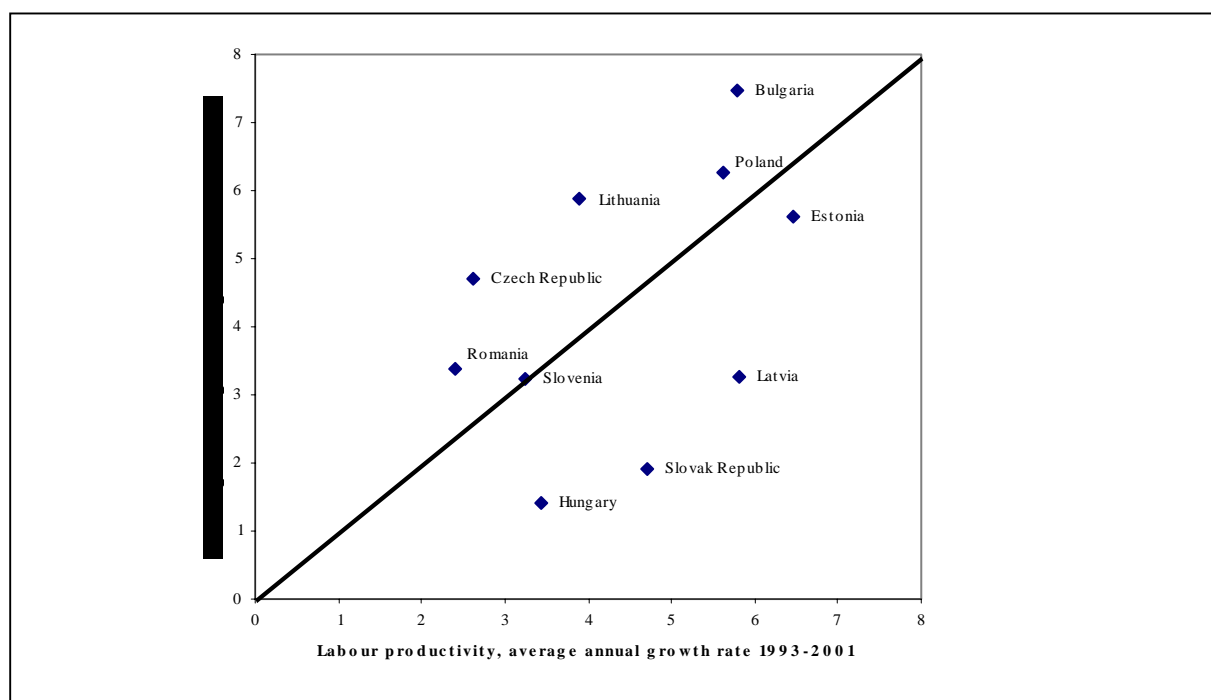
Note:  
 \* significant at the 10% level  
 \*\* significant at the 5% level  
 \*\*\* significant at the 2.5% level  
 \*\*\*\* significant at the 1% level  
 Source: data see annex B.1

This finding supports the notion that real wages have grown too fast in CEE and thus have induced further employment losses or have slowed down employment recovery. Indeed, as illustrated in figure 5, where labour productivity growth is measured against real wage growth, wage moderation appears to be a necessary although not a sufficient condition for employment recovery. In the two countries that experienced net employment growth between 1993 and 2001, Hungary and Slovenia, real wage growth remained below real GDP growth. In Estonia, Latvia and the Slovak Republic, however, wage moderation had no visible effect on employment.<sup>11</sup> Correspondingly, in all other countries, where real wage growth exceeded labour productivity growth, employment continued to fall.

<sup>11</sup> As regards Slovakia, this is consistent with the finding of a lower labour demand-wage elasticity in Basu, Estrin and Svejnar (2000b).



**Figure 5: Real GDP and Real Wage Growth in Selected Transition Countries**



## 4.2 Does Regulation Cause Unemployment in CEE?

### 4.2.1 Employment Protection Legislation

As stressed above, the claim that EPL has adverse effects on labour market performance can be sustained if differences in the strictness of employment protection legislation can at least partly explain the variance of outcomes across countries. For this purpose, a series of bivariate regressions are run testing the effects of the overall EPL indicator and its subindices separately (see table 8). First, the hypothesis that EPL affects aggregate unemployment and employment is tested. Second, the influence on real wages and productivity is examined. And finally, this section assesses the impact on labour mobility and long-term unemployment.

First, there is no evidence that EPL affects the unemployment rate. The results for the level of employment are ambiguous, however. The correlation coefficients for the unemployment rate are insignificant and bear changing signs. The correlation between the overall EPL index and the employment-to-population ratio is also insignificant. However, the EPL indicator on permanent contracts shows a strong positive correlation with the employment-to-population rate. This finding contradicts the neo-classical prediction of a negative influence

and is at odds with the results of the multivariate analysis of labour market institutions conducted by Cazes (Cazes, 2002) who also reports a negative effect. This analysis, however, is run on a sample covering both OECD countries and CEECs. Cazes herself warns that this result may be mostly driven by the group of OECD countries, since bivariate regression shows that EPL is positively related to labour force participation while it is negative for the OECD group. She interprets this as a sign that labour supply strongly interacts with labour demand, because of a 'heightened perception of job insecurity' (see also Cazes and Nesporova, 2001). The finding of this paper also supports the notion that EPL diminishes the number of layoffs and therefore is associated with a higher level of employment.

Second, there is no evidence that strict EPL is associated with upward pressure on real wages or productivity enhancements. The coefficients for the overall index of EPL strictness as well as its subindices are insignificant and some bear even negative signs. Obviously, this disproves the notion that EPL insulates insiders from wage competition by outsiders and thus fuels real wage growth. Nevertheless, this finding is still in line with the view that EPL per se does not strengthen insider power but that it requires other institutions to do so (e.g. wage compressing bargaining institutions). Furthermore, the wage pushing effect of EPL may also be offset by coordinated wage bargaining institutions, that take the trade-off between real wage increases and aggregate employment into account (Calmfors and Driffill, 1988). Slovenia is an example for that. Despite having the most rigid employment protection laws, real wage growth was aligned to labour productivity growth and employment resumed. Wage bargaining is highly coordinated and takes place in a tripartite body that sets wage corridors for occupational levels within which firms can bargain wages individually (see e.g. Haltiwanger and Vodopivec, 2002). On the other hand, there is also no support for the neo-institutionalist notion that EPL stimulates labour productivity since the coefficients for the summary index and the subindices are insignificant. This disproves the hypothesis that EPL is a necessary condition for restructuring and investments in human capital. Still, the absence of regulations does not nec-

essarily entail that employment security is absent as well since the latter can have endogenous origins like the reliance of firms on a skilled workforce.

Finally, the regression results support the argument that EPL affects labour mobility and causes long-term unemployment. First, the EPL index for permanent contracts is negatively correlated with labour turnover at the 10% significance level. Nevertheless, the effect appears to be moderate since the EPL index has to increase by one point (on a scale from 0 to 6) in order to lower the labour turnover rate by 12 percentage points. The coefficients for temporary contracts, collective dismissals and the overall strictness index are insignificant and the coefficient for temporary employment bears a positive sign. Moreover, EPL is surprisingly not correlated to average job tenure. Although all coefficients are positive, none of them is statistically significant. Second, the coefficients on long-term unemployment are significantly positive for the overall index, temporary contracts and collective dismissals but not for permanent contracts. The effects are quite considerable since an increase in employment protection by one index point raises the share of long-term unemployment by 10 to 12 percent. Moreover, the coefficients of determination are rather high for the overall and the temporary employment index. This pattern may be explained by the fact that temporary employment is the easiest way out of unemployment and that it prevents the deterioration of skills by making the transition to permanent employment easier. Furthermore, this finding suggests that the less strict regulation of temporary contracts induces substitution effects, which could also explain why the employment-to-population ratio tends to be higher in countries with relatively strict legislation on permanent contracts.

Consistent with this is the result that EPL positively affects the share of temporary employment. Surprisingly however, the coefficient on the share of temporary employment is significantly positive for temporary contracts and collective dismissals but insignificant for permanent contracts. The evidence is thus inconclusive so far. One explanation may be that collective dismissals play a much more important role for firms' labour demand decisions than the individual termination of contracts. Moreover, the fact that the strictness of laws on temporary employment increases with the overall level of regulation may explain why a

**Table 8: Employment Effects of EPL: Regression Results**

Dependent variable		Independent variables			
		Overall EPL index	Legislation on permanent contracts	Legislation on temporary contracts	Legislation on collective dismissals
Unemployment rate	Coefficient	<b>0.092</b>	<b>-4.017</b>	<b>2.003</b>	<b>1.602</b>
	Standard error	(2.921)	(3.105)	(1.993)	(3.416)
	T-statistic	0.031	-1.294	1.005	0.469
		R <sup>2</sup> : 0.000 n: 7	R <sup>2</sup> : 0.251 n: 7	R <sup>2</sup> : 0.168 n: 7	R <sup>2</sup> : 0.042 n: 7
Employment-to-population ratio	Coefficient	<b>2.478</b>	<b>8.691***</b>	<b>-1.153</b>	<b>2.693</b>
	Standard error	(3.805)	(2.929)	(2.919)	(4.579)
	T-statistic	0.651	2.967	-0.395	0.588
		R <sup>2</sup> : 0.078 n: 7	R <sup>2</sup> : 0.638 n: 7	R <sup>2</sup> : 0.030 n: 7	R <sup>2</sup> : 0.065 n: 7
Real wages	Coefficient	<b>0.664</b>	<b>-0.34</b>	<b>0.937</b>	<b>1.595</b>
	Standard error	(1.689)	(2.101)	(1.212)	(1.921)
	T-statistic	0.393	-0.162	0.773	0.831
		R <sup>2</sup> : 0.030 n: 7	R <sup>2</sup> : 0.005 n: 7	R <sup>2</sup> : 0.107 n: 7	R <sup>2</sup> : 0.121 n: 7
Labour productivity	Coefficient	<b>0.176</b>	<b>-0.503</b>	<b>0.597</b>	<b>0.125</b>
	Standard error	(1.119)	(1.359)	(0.795)	(1.339)
	T-statistic	0.158	-0.37	0.751	0.093
		R <sup>2</sup> : 0.005 n: 7	R <sup>2</sup> : 0.027 n: 7	R <sup>2</sup> : 0.101 n: 7	R <sup>2</sup> : 0.002 n: 7
Long-term unemployment	Coefficient	<b>12.184**</b>	<b>5.114</b>	<b>10.524****</b>	<b>10.863*</b>
	Standard error	(4.920)	(8.721)	(2.828)	(7.303)
	T-statistic	2.477	0.586	3.721	1.487
		R <sup>2</sup> : 0.551 n: 7	R <sup>2</sup> : 0.054 n: 7	R <sup>2</sup> : 0.745 n: 7	R <sup>2</sup> : 0.307 n: 7
Average job tenure	Coefficient	<b>1.419</b>	<b>0.329</b>	<b>1.64</b>	<b>1.875</b>
	Standard error	(1.658)	(2.308)	(1.405)	(2.290)
	T-statistic	0.856	0.142	1.167	0.819
		R <sup>2</sup> : 0.196 n: 5	R <sup>2</sup> : 0.007 n: 5	R <sup>2</sup> : 0.312 n: 5	R <sup>2</sup> : 0.183 n: 5
Labour turnover	Coefficient	<b>-2.741</b>	<b>-12.593*</b>	<b>3.334</b>	<b>-1.929</b>
	Standard error	(8.648)	(7.376)	(5.768)	(12.949)
	T-statistic	-0.317	-1.707	0.578	-0.149
		R <sup>2</sup> : 0.032 n: 5	R <sup>2</sup> : 0.493 n: 5	R <sup>2</sup> : 0.100 n: 5	R <sup>2</sup> : 0.007 n: 5
Temporary employment	Coefficient	<b>2.134*</b>	<b>2.118</b>	<b>1.765*</b>	<b>2.979**</b>
	Standard error	(1.092)	(1.659)	(1.112)	(1.457)
	T-statistic	1.955	1.277	1.588	2.044
		R <sup>2</sup> : 0.560 n: 5	R <sup>2</sup> : 0.352 n: 5	R <sup>2</sup> : 0.456 n: 5	R <sup>2</sup> : 0.582 n: 5

Note:

\* significant at the 10% level

\*\* significant at the 5% level

\*\*\* significant at the 2.5% level

\*\*\*\* significant at the 1% level

Sources: data see annex B.2

cross-country regression yields a positive sign. However, a statistical caveat as regards the regression results and this interpretation have to be posed here since the sample was rather small (n = 5). More thorough investigation

based on more reliable data is thus needed to provide robust empirical evidence for sustaining the hypothesis of a substitution effect between temporary and permanent employment. Nevertheless, in sum, the findings suggest that EPL does ‘bite’ in transition as regards labour mobility and long-term unemployment.

#### 4.2.2 Statutory Minimum Wages

In the debate reviewed in section one, it has been argued that statutory minimum wages affect the level of employment and cause unemployment, especially among inexperienced school-leavers who need further on-the-job training. Moreover, it has been contended that minimum wages exert pressure on the structure and level of wages and push employers to invest in productivity enhancing technologies. In the following, these hypotheses are tested by bivariate regression analysis. As is common practice in the literature (see e.g. OECD, 1998), the ratio of the minimum wage to the gross average wage is used to measure the ‘bite’ of the minimum wage. Because minimum wages underwent profound adjustments in early transition in most countries, the average of 1993 to 1998 enters the analysis in order to test its correlation with a series of dependent variables. First, as for the hypotheses that minimum wages affect unemploy-

**Table 9: Employment Effects of Statutory Minimum Wages: Regression Results**

Independent variable	Dependent variables					
	Unemployment rate		Youth unemployment rate		Employment-to-population ratio	
ratio of minimum wage to gross average wage, average 1993-1999						
Coefficient	<b>0.544*</b>		<b>0.900***</b>		<b>-0.527</b>	
Standard error	(0.326)		(0.365)		(0.582)	
T-statistic	1.672		2.467		-0.907	
	R <sup>2</sup> : 0.318	n: 8	R <sup>2</sup> : 0.504	n: 8	R <sup>2</sup> : 0.121	n: 8
	Real wages		Labour productivity		Earnings distribution	
Coefficient	<b>0.145</b>		<b>0.275*</b>		<b>0.007**</b>	
Standard error	(0.247)		(0.171)		(0.003)	
T-statistic	0.589		1.601		2.08	
	R <sup>2</sup> : 0.055	n: 8	R <sup>2</sup> : 0.299	n: 8	R <sup>2</sup> : 0.464	n: 7

Note:

\* significant at the 10% level

\*\* significant at the 5% level

\*\*\* significant at the 2.5% level

Sources: data see annex B.3

ment, the ILO unemployment rate, the youth unemployment rate as well as the employment-to-population ratio enter as dependent variables. Second, the influence of minimum wages on aggregate real wages, productivity and the earnings distribution is examined. The detailed descriptions and figures for the dependent and independent variables that entered the regressions are documented in annex B.3 and the regression results are reported in table 9.

The first finding is that minimum wages do contribute to unemployment despite their relatively low level in Central and Eastern Europe. The coefficient for the unemployment rate is significantly positive and relatively high. An increase in the minimum-to-average-wage ratio by one percentage point raises the total unemployment rate on average by 0.54 points. Moreover, as predicted by neoclassical theory, the effects are even more pronounced for youth unemployment. The correlation coefficient is positive at the 2.5% significance level and shows a high responsiveness of youth unemployment to statutory minimum wages. On average, an increase by one percentage point in the minimum-to-average-wage ratio raises the youth unemployment rate by 0.9 points. What is more, the variance in statutory minimum wages can explain about half of the total variance of youth unemployment across the region as demonstrated by the coefficient of determination,  $R^2$ . This strongly suggests that statutory minimum wages do 'bite' despite their low level. Yet, minimum wages cannot explain the variance in employment levels across the region. The coefficients on the employment-to-population ratio is negative but insignificant. Still, these findings are contradictory only at first sight. Bearing in mind that employment and participation rates are influenced by a series of country-specific factors (e.g. early retirement schemes, etc.) in CEE, it is not surprising that a cross-country regression does not find supporting evidence for negative employment effects.

Second, the regressions on real wages, labour productivity and the earnings distribution yield ambiguous results. Initially, there is no supporting evidence for the notion that minimum wages rise the real wages generally. Although the coefficient is positive, the null hypothesis that the effect is actually zero cannot be refuted at any significance level. This result refutes the thesis that minimum wages have spillover effects and lead to general upward wage pressure. If

at all, this finding is consistent with the notion that minimum wages rise wages at the bottom of the distribution without significantly affecting the mean wage because of offsetting effects at the upper end, i.e. through wage compression.

This explanation, however, is not supported by the finding that higher minimum wages are correlated with greater inequality. As the regression result in table 9 shows, a rise in the minimum-to-average-wage ratio increases the Gini coefficient for the earnings distribution on average by 0.7 points. Strikingly, this result is at odds with theory since one would expect to find a negative effect. From a political economy perspective, this apparent paradox can be explained by the fact that political pressure for minimum wages is likely to be high in countries where inequality is a more pressing problem than in others.

Labour productivity, in turn, appears to be correlated with the minimum wage. The coefficient is significantly positive and a one-percentage-point rise in the minimum-to-average-wage ratio increases the average growth rate of labour productivity by 0.275 percentage points. Taking into account that average productivity growth rates are between 0.3 percent in Romania and 6.5 percent in Estonia, the effect is quite considerable, although the variance in minimum wages can only account for a third of the total variance in productivity.

In conclusion, this section has found that firms' labour demand has become responsive to wages during transition and that wage pressure is associated with protracted employment decline across countries. Moreover, wage moderation is a necessary although not sufficient condition for net employment growth in CEE. This supports the view that unemployment is neoclassical rather than Keynesian. EPL is not found to increase unemployment but to slow down labour turnover and to cause persistence. In addition, EPL appears to have a positive effect on the level of employment. Preliminary evidence hints at substitution effects between permanent and temporary employment, yet further research is necessary to sustain this hypothesis with more robust empirical evidence. Minimum wages apparently do 'bite' in transition countries despite their low level. Bivariate regressions show that the statutory minimum affects total and youth unemployment rates, although negative effects on the total employment level are

not demonstrable. Moreover, minimum wages appear to spur productivity growth but they do not affect the level and structure of real wages.

## **Conclusion**

This paper has reviewed the ‘Eurosclerosis’ debate from a transition perspective and outlined some stylized facts on the development of Central and Eastern European labour markets. Finally, it has tested the neoclassical contention that wage flexibility is necessary for low unemployment and its implication that even moderate labour market regulations in the presence of unusually large adjustments might have adverse employment effects.

The analysis has yielded four major findings. First, labour market performance is not related to GDP growth in Central and Eastern Europe. Although high and sustained growth is undoubtedly conducive to the recovery of employment and the reduction of unemployment, it is neither necessary nor sufficient. Apparently, other factors have a stronger influence on outcomes. Along these lines, the prevailing phenomenon of ‘jobless growth’ can be explained partly by the ‘normalisation’ of participation rates, which had been extraordinarily high under Socialism and have converged towards West European levels during transition. Second, labour demand is responsive to changes in real wages and too high wage growth has contributed to unemployment in CEE. Moreover, wage moderation is found to be a necessary condition for lowering the unemployment rate and for the recovery of employment. Third, employment protection legislation does not increase aggregate unemployment but causes persistence by slowing down labour turnover and increasing the share of long-term unemployment. Yet, wage pressure by insiders is not demonstrable, perhaps partly because of substitution effects between permanent and temporary employment that may promote the segmentation of the labour market in a group of core workers and a group of less attached temporary workers. This would also explain why the employment rate is positively correlated with EPL on permanent employment. However, the empirical evidence is still too sketchy to provide robust empirical evidence for this hypothesis. Fourth, minimum wages do ‘bite’ in CEE despite their relatively low level by international standards. Although the statutory minimum wage appears



to rise productivity, the gains are not high enough to foreclose disemployment effects. Accordingly, there is strong evidence that minimum wages cause unemployment, in particular among young people.

On balance, the neoclassical notion that regulations cause labour market rigidities and are hence premature for economies undergoing pervasive structural change cannot be refuted on the basis of the empirical evidence provided by this paper. On the contrary, the cross-country regressions show that EPL is to a great extent responsible for the high share of long-term unemployment while statutory minimum wages account considerably for differences in unemployment rates, particularly among the youth. However, wage pressure, the third important source of unemployment in transition, cannot be explained by differences in regulations but apparently represents a factor of its own. Conversely, the neo-institutionalist notion that higher wages are conducive to productivity cannot be refuted either. All in all, the Central and Eastern European experience suggests that there is a trade-off between real wage growth, the pace of restructuring and the level of unemployment that leaves considerable scope for social choice for different transition paths. The judgement as to whether labour markets in CEE should be 'deregulated' or not therefore is to a great extent bound to normative assumptions.

Furthermore, as recent research by the Varieties of Capitalism approach suggests, labour market institutions should not be evaluated isolatedly but as a part of a broader institutional framework that, in the minimum, entails corporate governance, product and innovation strategies as well as the vocational training system (see Hall and Soskice, 2001). From this perspective, labour market regulations may cause adverse employment effects because complementary institutions are not yet in place. In the authors' opinion, the question whether governments should dismantle 'premature regulations' or rather encourage the emergence of social dialogue, vocational training systems and the like in order to avoid institutional inconsistencies is basically a political decision that goes beyond the capacities of economic analysis. Consequently, this paper refrains from making any suggestion in this respect.

Research, however, should guide the political process by enabling informed decisions. This paper has drawn attention to two questions that necessitate further research. First, the hypothesis that the uneven regulation of permanent and temporary contracts leads to substitution effects and that these effects can account for the positive effect of EPL on the employment level needs more thorough investigation as soon as better data are available. Second, an enquiry into the determinants of real wage growth would be useful in order to answer the question of whether wage pressure has institutional or endogenous reasons in Central and Eastern Europe.

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## Annex A.1 - Basic Economic Indicators for CEE Transition Economies

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Bulgaria</b>														
1 Population, total	in 000	8,877	8,718	8,632	8,540	8,472	8,435	8,400	8,356	8,312	8,257	8,208	8,125	7,913
2 working age (15-64 years)	in 000	5,848	5,804	5,769	5,734	5,699	5,664	5,629	5,619	5,608	5,597	5,587	5,576	5,556
3 Labour force	in 000	4,525	4,436	4,389	4,338	4,300	4,278	4,257	4,239	4,221	4,197	4,176	4,161	4,081
4 Real GDP	in million BGL	49.94	45.39	41.56	38.54	37.96	38.65	39.76	36.02	34.01	35.37	36.18	38.13	39.66
5 Growth rate	in %	-	-9.1	-8.4	-7.3	-1.5	1.8	2.9	-9.4	-5.6	4.0	2.3	5.4	4.0
6 Index	(1989=100)	100.0	90.9	83.2	77.2	76.0	77.4	79.6	72.1	68.1	70.8	72.4	76.4	79.4
7 Total employment <sup>1)</sup>	in 000	4,365	4,097	3,564	3,274	3,222	3,242	3,282	3,286	3,157	3,153	3,088	2,980	2,940
8 Growth rate	in %	-	-6.1	-13.0	-8.1	-1.6	0.6	1.3	0.1	-3.9	-0.2	-2.1	-3.5	-1.3
9 Index	(1989=100)	100.0	93.9	81.6	75.0	73.8	74.3	75.2	75.3	72.3	72.2	70.7	68.3	67.4
10 Unemployment (registered)	in 000	-	65.08	419.12	576.89	626.14	488.44	423.77	478.77	523.51	465.2	610.55	682.79	662.26
11 Rate	-	-	1.7	11.1	15.3	16.4	12.8	11.1	12.5	13.7	12.2	16.0	17.9	17.3
12 Unemployment (ILO definition)	in 000	-	-	-	-	814.7	734.1	564.6	488.7	491.4	438.8	486.7	559	661.1
13 Rate	in %	-	-	-	-	21.4	20.0	15.7	13.5	13.7	12.2	14.1	16.3	19.4
14 Average monthly earnings (agriculture excluded) <sup>2)</sup>	in BGL	276	352	964	2132	3340	5090	7755	13489	129571	185027	203000	227000	251000
15 Consumer price index (annual average)	(1989=100)	100	126	548	996	1724	3384	5482	12225	144500	176579	177815	195419	209880
16 Real consumer wage index	(1989=100)	100.0	101.0	63.8	77.5	70.2	54.5	51.3	40.0	32.5	38.0	41.4	42.1	43.3
17 Growth rate	in %	-	1.0	-37.2	13.7	-7.3	-15.7	-3.2	-11.3	-7.5	5.5	3.4	0.7	1.2
18 Labour productivity index	(1989=100)	100.0	96.8	101.9	102.9	103.0	104.2	105.9	95.8	94.1	98.0	102.4	111.8	117.9

- not available

Note: <sup>1)</sup> 1989-1992 based on Labour-related Establishment Survey (ES), 1993 onwards based on Labour Force Survey (LFS); prior to 1992: state and cooperative sector.

<sup>2)</sup> based on Labour-related Establishment Census (CA), 1989-1995 according to ISIC-Rev2, 1996 onwards according to ISIC-Rev3 standard; 1999 denomination changed: 1 new leva = 1000 old leva.

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Czech Republic</b>														
1 Population, total	in 000	10,362	10,363	10,309	10,318	10,331	10,336	10,331	10,315	10,304	10,295	10,283	10,273	10,224
2 Working age (15-64 years)	in 000	6,815	6,844	6,883	6,923	6,963	7,004	7,044	7,069	7,093	7,118	7,143	7,168	7,186
3 Labour force	in 000	5,447	5,454	5,466	5,510	5,557	5,599	5,637	5,661	5,689	5,717	5,744	5,772	5,732
4 Real GDP	in bn CZK	-	1,449	1,281	1,256	1,264	1,298	1,381	1,448	1,429	1,414	1,421	1,467	1,515
5 Growth rate		-	-	-11.6	-1.9	0.6	2.7	6.4	4.8	-1.3	-1.0	0.5	3.3	3.3
6 Index	(1990=100)	-	100.00	88.39	86.68	87.18	89.53	95.29	99.88	98.61	97.59	98.04	101.23	104.53
7 Total employment <sup>1)</sup>	in 000	-	5,085	4,993	4,948	4,874	4,927	4,963	4,972	4,937	4,866	4,764	4,732	4,750
8 Growth rate	in %	-	-	-1.8	-0.9	-1.5	-0.3	1.7	-3.0	-1.6	-0.6	-2.1	-0.7	0.4
9 Index	(1990=100)	-	100.0	98.2	97.3	95.9	96.9	97.6	97.8	97.1	95.7	93.7	93.1	93.4
10 Unemployment (registered)	in 000	-	39	222	135	185	166	153	186	269	387	488	457	462
11 Rate	in %	-	0.7	4.1	2.6	3.5	3.2	2.9	3.5	5.2	7.5	9.4	8.8	8.9
12 Unemployment (ILO definition)	in 000	-	-	-	-	220	221	208	201	248	336	454	455	421
13 Rate	in %	-	-	-	-	4.3	4.3	4.0	3.9	4.8	6.5	8.7	8.8	8.1
14 Average monthly earnings (agriculture excluded)	in CZK	3135	3241	3803	4689	5885	6980	8266	9796	10835	11844	12845	13664	14815
15 Consumer price index (annual average)	(1989=100)	100	111	174	193	233	256	279	304	330	365	373	387	406
16 Real consumer wage index	(1990=100)	-	100.0	74.9	83.2	86.4	93.2	101.1	110.1	112.3	110.9	117.8	120.6	124.9
17 Growth rate	in %	-	-	-25.1	8.2	3.2	6.8	8.0	9.0	2.1	-1.4	6.9	2.8	4.3
18 Labour productivity index	(1990=100)	-	100.0	90.0	89.1	90.9	92.4	97.6	102.1	101.6	102.0	104.6	108.8	111.9

- not available

Note: <sup>1)</sup> 1990-1992 estimated on the basis of growth rates reported in European Training Foundation (1999), Background Study on Employment and Labour Market in the Czech Republic.

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Estonia</b>														
1 Population	in 000	1,568	1,569	1,561	1,533	1,494	1,463	1,437	1,416	1,400	1,386	1,376	1,370	1,364
2 Working age (15-64 years)	in 000	1,033	1,039	1,021	1,003	986	969	952	947	942	936	931	926	926
3 Labour force	in 000	855	854	850	836	815	798	784	776	770	766	763	762	762
4 Real GDP	in bn EEK	108.76	101.08	92.99	73.31	67.19	65.85	68.66	71.36	78.34	81.95	81.43	87.24	91.63
5 Growth rate	in %	-	-7.1	-8.0	-21.2	-8.4	-2.0	4.3	3.9	9.8	4.6	-0.6	7.1	5.0
6 Index	(1989=100)	100.0	92.9	85.5	67.4	61.8	60.5	63.1	65.6	72.0	75.3	74.9	80.2	84.2
7 Total employment <sup>2)</sup>	in 000	838	826	807	761	699	675	633	619	617	607	579	573	578
8 Growth rate	in %	-	-1.4	-2.4	-5.6	-8.3	-3.3	-6.2	-2.2	-0.3	-1.7	-4.5	-1.2	0.9
9 Index	(1989=100)	100.0	98.6	96.3	90.9	83.4	80.6	75.6	73.9	73.7	72.4	69.1	68.3	68.9
10 Unemployment (registered)	in 000	-	-	0.86	14.89	16.32	15.32	15.6	17.3	-	18.8	44	46.3	54.1
11 Rate	in %	-	-	-	-	4.4	4.1	4.4	4.0	3.7	5.1	5.1	5.3	6.5
12 Unemployment (ILO definition)	in 000	4.7	5.3	12.1	29.2	49.1	55.5	68.1	68.4	65.8	66.1	80.5	89.9	83.1
13 Rate	in %	0.6	0.6	1.5	3.7	6.6	7.6	9.7	9.9	9.6	9.8	12.2	13.6	12.6
14 Average monthly earnings (manufacturing) <sup>1)</sup>	in EEK	29.26	35.98	85.07	536	1076	1849	2498	3078	3733	4243	4374	4844	5337
15 Consumer price index (annual average)	(1989=100)	100	123	383	4499	8547	12624	16285	20047	22293	24098	24893	25889	27391
16 Real consumer wage index	(1989=100)	100.0	100.0	76.0	40.7	43.0	50.1	52.4	52.5	57.2	60.2	60.1	63.9	66.6
17 Growth rate	in %	-	0.0	-24.0	-46.4	5.7	16.3	4.7	0.1	9.1	5.1	-0.2	6.5	4.1
18 Labour productivity index	(1989=100)	100.0	94.2	88.8	74.2	74.1	75.1	83.5	88.8	97.8	104.1	108.3	117.4	122.2

- not available

Note: <sup>1)</sup> prior to 1992: rubles (adjusted)

<sup>2)</sup> Ages 15-74; prior to 1997: ages 15-69

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Hungary</b>														
1 Population	in 000	10,398	10,365	10,346	10,324	10,294	10,261	10,229	10,193	10,155	10,114	10,068	10,122	10,187
2 Working age (15-64 years)	in 000	6,907	6,885	6,894	6,904	6,913	6,923	6,933	6,919	6,906	6,893	6,879	6,866	6,855
3 Labour force	in 000	4,772	4,735	4,753	4,769	4,782	4,792	4,804	4,806	4,807	4,807	4,804	4,849	4,875
4 Real GDP	in bn HUF	5,174	4,993	4,399	4,264	4,240	4,365	4,430	4,489	4,694	4,923	5,128	5,392	5,597
5 Growth rate	in %	-	-3.5	-11.9	-3.1	-0.6	2.9	1.5	1.3	4.6	4.9	4.2	5.2	3.8
6 Index	(1989=100)	100.0	96.5	85.0	82.4	81.9	84.4	85.6	86.8	90.7	95.1	99.1	104.2	108.2
7 Total employment <sup>1)</sup>	in 000	5,139	4,979	4,501	4,083	3,827	3,752	3,679	3,648	3,646	3,698	3,812	3,849	3,860
8 Growth rate <sup>1)</sup>	in %	-	-3.1	-9.6	-9.3	-6.3	-2.0	-1.9	-0.8	0.0	1.4	3.1	1.0	0.3
9 Index	(1989=100)	100.0	96.9	87.6	79.5	74.5	73.0	71.6	71.0	71.0	72.0	74.2	74.9	75.1
10 Unemployment (registered)	in 000	-	79.5	406.1	663	632.1	519.6	495.9	477.5	464	404.1	404.5	372.4	342.8
11 Rate	in %	-	1.7	8.5	12.3	12.1	10.4	12.0	10.7	10.4	9.6	9.6	-	-
12 Unemployment (ILO definition)	in 000	-	-	-	444.2	518.9	451.2	416.5	400.1	348.8	313	284.7	262.5	232.9
13 Rate	in %	-	-	-	9.8	11.9	10.7	10.2	9.9	8.7	7.8	7.0	6.4	5.7
14 Average monthly earnings (agriculture excluded) <sup>2)</sup>	in HUF	10461	13107	16752	22133	27879	34665	40593	48393	59383	70038	78367	89014	104699
15 Consumer price index (annual average)	(1989=100)	100	129	174	214	262	311	399	494	584	667	734	806	880
16 Real consumer wage index	(1989=100)	100.0	97.2	92.0	98.8	101.6	106.4	97.2	93.7	97.2	100.3	102.0	105.6	113.7
17 Growth rate	in %	-	-2.8	-5.2	6.8	2.8	4.7	-9.2	-3.4	3.5	3.1	1.7	3.5	8.1
18 Labour productivity index	(1989=100)	100.0	99.6	97.1	103.7	110.0	115.6	119.6	122.2	127.9	132.2	133.6	139.1	144.0

- not available

Note: <sup>1)</sup> 1989-1992: estimation based on growth rates reported in EBRD Transition Report 1997; employment age 15-74

<sup>2)</sup> Based on labour-related establishment census; 1989-1992 according to ISIC-Rev2 and 1993 onwards ISIC-Rev3 standard; prior to 1999: only enterprises with more than 20

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Latvia</b>														
1 Population	in 000	2,684	2,671	2,662	2,632	2,586	2,548	2,515	2,491	2,450	2,410	2,390	2,372	2,359
2 Working age (15-64 years)	in 000	1,773	1,777	1,752	1,729	1,705	1,682	1,659	1,650	1,642	1,634	1,625	1,617	1,614
3 Labour force	in 000	1,468	1,457	1,451	1,433	1,406	1,384	1,364	1,353	1,333	1,313	1,304	1,296	1,294
4 Real GDP	in bn LVL	4.80	4.74	4.24	2.76	2.35	2.37	2.35	2.43	2.64	2.74	2.77	2.96	3.18
5 Growth rate	in %	-	-1.2	-10.4	-34.9	-14.9	0.6	-0.8	3.3	8.6	3.9	1.1	6.8	7.6
6 Index	(1989=100)	100.0	98.8	88.5	57.6	49.1	49.4	49.0	50.6	55.0	57.1	57.7	61.7	66.3
7 Total employment <sup>1)</sup>	in thousands	1,407	1,409	1,397	1,294	1,205	1,083	1,046	1,018	1,037	1,043	1,038	1,038	1,037
8 Growth rate	in %	-	0.1	-0.8	-7.4	-6.9	-10.1	-3.4	-2.7	1.9	0.6	-0.5	0.0	-0.1
9 Index	(1989=100)	100.0	100.1	99.3	92.0	85.6	77.0	74.3	72.4	73.7	74.1	73.8	73.8	73.7
10 Unemployment (registered)	in 000	-	-	-	31.28	76.74	83.95	83.23	90.82	84.93	111.38	109.5	93.28	91.64
11 Rate	in %	-	-	-	2.3	5.8	6.5	6.6	7.2	7.0	9.2	9.1	7.8	7.7
12 Unemployment (ILO definition)	in 000	-	-	-	-	-	-	227	216.7	171.2	160.6	167.3	165.1	142.1
13 Rate	in %	-	-	-	-	-	-	18.9	18.3	14.4	13.8	14.5	14.6	12.8
14 Average monthly earnings (total)	in LVL	-	1.46	2.81	21.5	47.23	61.37	82.35	89.41	109.81	123.07	132.61	141.75	149.14
15 Consumer price index (annual average)	(1989=100)	-	100	272	2859	5946	8087	10108	11888	12886	13492	13816	14175	14529
16 Real consumer wage index	(1989=100)	-	100.0	70.8	51.5	54.4	52.0	55.8	51.5	58.4	62.5	65.7	68.5	70.3
17 Growth rate	in %	-	-	-29.2	-19.2	2.9	-2.4	3.8	-4.3	6.9	4.1	3.3	2.8	1.8
18 Labour productivity index	(1989=100)	100.0	98.6	89.1	62.7	57.3	64.1	65.9	70.0	74.6	77.0	78.2	83.6	90.0

- not available

Note: <sup>1)</sup> Official estimate

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Lithuania</b>														
1 Population	in 000	3,691	3,698	3,704	3,700	3,683	3,658	3,632	3,605	3,580	3,555	3,531	3,506	3,482
2 Working age (15-64 years)	in 000	2,438	2,457	2,447	2,437	2,427	2,417	2,407	2,395	2,382	2,370	2,358	2,346	2,354
3 Labour force	in 000	1,906	1,906	1,908	1,905	1,895	1,881	1,867	1,857	1,848	1,839	1,830	1,821	1,814
4 Real GDP	in bn LTL	-	41.56	39.20	30.87	25.86	23.34	24.10	25.24	27.08	28.46	27.35	28.39	30.05
5 Growth rate	in %	-	-	-5.7	-21.3	-16.2	-9.8	3.3	4.7	7.3	5.1	-3.9	3.8	5.9
6 Index	(1990=100)	-	100.0	94.3	74.3	62.2	56.1	58.0	60.7	65.1	68.5	65.8	68.3	72.3
7 Total employment <sup>1)</sup>	in 000	1,903	1,853	1,898	1,855	1,778	1,675	1,644	1,659	1,669	1,656	1,648	1,586	1,522
8 Growth rate	in %	-	-2.7	2.4	-2.2	-4.2	-5.8	-1.9	0.9	0.6	-0.8	-0.5	-3.7	-4.0
9 Index	(1990=100)	-	100.0	102.4	100.1	96.0	90.4	88.7	89.5	90.1	89.4	88.9	85.6	82.1
10 Unemployment (registered)	in 000	-	-	4.8	66.5	65.5	78	127.7	109.4	120.2	122.8	177.4	225.9	224
11 Rate	in %	-	-	0.3	3.5	3.5	4.5	7.3	6.2	6.7	6.5	10.0	12.6	12.9
12 Unemployment (ILO definition)	in 000	-	-	-	-	-	347.2	347.1	317.4	257.2	244.9	263.3	275.7	299.3
13 Rate	in %	-	-	-	-	-	17.4	17.1	16.4	14.1	13.3	14.1	15.4	17.0
14 Average monthly earnings (manufacturing) <sup>2)</sup>	in LTL	243	283	751	6327	17800	35100	50100	64000	79800	95000	100400	97500	99300
15 Consumer price index (annual average)	(1990=100)	-	100	325	3640	18578	31973	44602	55619	60569	63658	64167	64809	65651
16 Real consumer wage index	(1990=100)	-	100.0	81.7	61.4	33.9	38.8	39.7	40.7	46.6	52.7	55.3	53.2	53.4
17 Growth rate	in %	-	-	-18.3	-20.3	-27.6	4.9	0.9	1.0	5.9	6.2	2.6	-2.1	0.3
18 Labour productivity index		-	100.0	92.1	74.2	64.8	62.1	65.4	67.8	72.3	76.6	74.0	79.8	88.0

- not available

Note: <sup>1)</sup> Official estimate

<sup>2)</sup> Based on labour-related establishment census; 1989-1992 according to ISIC-Rev2 and 1993 onwards ISIC-Rev3 standard.

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Poland</b>														
1 Population	in 000	37,963	38,119	38,244	38,365	38,459	38,544	38,588	38,618	38,650	38,666	38,658	38,648	38,641
2 Working age (15-64 years)	in 000	24,608	24,711	24,869	25,028	25,189	25,350	25,513	25,708	25,905	26,103	26,303	26,504	26,651
3 Labour force	in 000	18,765	18,732	18,851	18,968	19,076	19,175	19,255	19,390	19,522	19,650	19,762	19,877	19,904
4 Real GDP	in bn PLN	63.38	56.03	52.11	53.46	55.49	58.38	62.46	66.21	70.71	74.11	77.15	80.23	81.03
5 Growth rate	in %	-	-11.6	-7.0	2.6	3.8	5.2	7.0	6.0	6.8	4.8	4.1	4.0	1.0
6 Index	(1990=100)	100.0	88.4	82.2	84.3	87.6	92.1	98.6	104.5	111.6	116.9	121.7	126.6	127.9
7 Total employment	in 000	18,220	17,321	16,285	15,462	15,060	14,658	14,791	14,969	15,177	15,354	14,757	14,526	14,207
8 Growth rate	in %	-	-4.9	-6.0	-5.1	-2.6	-2.7	0.9	1.2	1.4	1.2	-3.9	-1.6	-2.2
9 Index	(1990=100)	100.0	95.1	89.4	84.9	82.7	80.5	81.2	82.2	83.3	84.3	81.0	79.7	78.0
10 Unemployment (registered)			1126.1	2155.6	2509.3	2889.6	2838	2628.8	2359.5	1826.4	1831.4	2349.8	2702.6	3115.1
11 Rate	in %		6.5	12.2	14.3	16.4	16.0	14.9	13.2	10.3	10.4	13.1	15.0	17.4
12 Unemployment (ILO definition)	in 000					2427	2473	2276	2108	1924	1808	2391	2784	3170
13 Rate	in %	..	6.5	11.8	13.3	14.0	14.4	13.3	12.4	11.2	10.7	12.5	16.7	18.5
14 Average monthly earnings (agriculture excluded)	in PLN	207.443	1036	1765	2917	3928.1	5278.4	6926.8	8760	10676	12344	16995	19422.7	20692.2
15 Consumer price index (annual average)	(1989=100)	100	686	1168	1670	2260	2987	3818	4577	5260	5880	6309	6947	7329
16 Real consumer wage index	(1989=100)	100.0	72.8	72.9	84.2	83.8	85.2	87.5	92.3	97.9	101.2	129.8	134.8	136.1
17 Growth rate	in %		-27.2	0.0	11.3	-0.4	1.4	2.3	4.8	5.6	3.3	28.7	4.9	1.3
18 Labour productivity index		100.0	93.0	92.0	99.4	105.9	114.5	121.4	127.2	133.9	138.8	150.3	158.8	164.0

- not available

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.



## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Romania</b>														
1 Population	in 000	23,152	23,207	23,185	22,789	22,755	22,731	22,681	22,608	22,554	22,503	22,458	22,435	22,408
2 Working age (15-64 years)	in 000	15,253	15,325	15,323	15,321	15,319	15,318	15,316	15,324	15,332	15,339	15,347	15,355	15,380
3 Labour force	in 000	10,699	10,647	10,681	10,544	10,572	10,606	10,626	10,639	10,661	10,682	10,708	10,744	10,751
4 Real GDP	in bn ROL	471086	444705	387263	353262	358671	372811	399342	415108	389981	368922	364495	371056	390722
5 Growth rate	in %	-	-5.6	-12.9	-8.8	1.5	3.9	7.1	3.9	-6.1	-5.4	-1.2	1.8	5.3
6 Index	(1989=100)	100.0	94.4	82.2	75.0	76.1	79.1	84.8	88.1	82.8	78.3	77.4	78.8	82.9
7 Total employment	in 000	10,946	10,840	10,786	10,458	10,062	10,914	11,152	10,936	11,050	10,845	10,776	10,764	10,697
8 Growth rate	in %	-	-1.0	-0.5	-3.0	-3.8	-0.5	-5.2	-1.2	-3.8	-2.3	-4.5	2.5	0.8
9 Index	(1989=100)	100.0	99.0	98.5	95.5	91.9	91.5	86.7	85.7	82.4	80.5	76.9	78.8	79.4
10 Unemployment (registered)	in 000	-	-	337.4	929	1164.7	1223.9	998.4	657.6	881.4	1025.1	1130.3	1007.1	826.9
11 Rate	in %	-	-	3.0	8.2	10.4	10.9	9.5	6.6	8.9	10.4	11.8	10.5	8.6
12 Unemployment (ILO definition)	in 000	-	-	-	-	-	971	967.9	790.9	706.5	732.4	789.9	821.2	750
13 Rate	in %	-	-	-	-	-	8.2	8.0	6.7	6.0	6.3	6.8	7.1	6.6
14 Average monthly earnings	(1990=100)	100	109.5	244.185	649.532	1877.15	4422.56	6655.95	10263.5	20342.2	32608.6	47054.2	69122.6	102924
15 Consumer price index (annual average)	(1989=100)	100	105	274	852	3033	7180	9499	13184	33593	53447	77925	113537	152707
16 Real consumer wage index	(1989=100)	100.0	104.2	89.0	76.3	61.9	61.6	70.1	77.8	60.6	61.0	60.4	60.9	67.4
17 Growth rate	in %	-	4.2	-15.2	-12.7	-14.4	-0.3	8.5	7.8	-17.3	0.5	-0.6	0.5	6.5
18 Labour productivity index	(1989=100)	100.0	95.3	83.4	78.5	82.8	79.4	83.2	88.2	82.0	79.0	78.6	80.1	84.9

- not available

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Slovak Republic</b>														
1 Population	in 000	5,297	5,283	5,283	5,307	5,325	5,347	5,364	5,374	5,383	5,391	5,395	5,401	5,404
2 Working age (15-64 years)	in 000	3,392	3,404	3,436	3,469	3,502	3,535	3,569	3,599	3,630	3,660	3,691	3,722	3,747
3 Labour force	in 000	2,707	2,709	2,723	2,750	2,775	2,802	2,826	2,853	2,881	2,907	2,932	2,958	2,965
4 Real GDP	in bn SKK	680	662	566	528	508	534	569	602	636	661	670	685	707
5 Growth rate	in %	-	-2.7	-14.6	-6.7	-3.7	5.2	6.5	5.8	5.6	4.0	1.3	2.2	3.3
6 Index	(1990=100)	100.0	97.3	83.1	77.6	74.7	78.6	83.6	88.5	93.5	97.2	98.5	100.7	104.0
7 Total employment <sup>1)</sup>	in 000	2,615	2,568	2,198	2,205	2,203	2,110	2,147	2,225	2,206	2,199	2,132	2,102	2,124
8 Growth rate	in %	-	-1.8	-14.4	0.3	-0.1	-4.2	1.7	3.6	-0.9	-0.3	-3.0	-1.4	1.0
9 Index	(1989=100)	100.0	98.2	84.1	84.3	84.2	80.7	82.1	85.1	84.3	84.1	81.5	80.4	81.2
10 Unemployment (registered)	in 000	-	-	169	285.5	323.2	366.2	349.8	324.3	336.7	379.5	485.2	519.1	519.5
11 Rate	in %	-	-	6.6	11.4	12.9	14.4	13.8	12.6	12.9	13.7	17.3	18.3	18.2
12 Unemployment (ILO definition)	in 000	-	-	-	-	-	333.5	323.7	284.2	297.5	317.1	416.8	485.2	508
13 Rate	in %	-	-	-	-	-	13.7	13.1	11.3	11.8	12.5	16.2	18.6	19.2
14 Average monthly earnings (non-agriculture) <sup>2)</sup>	in SKK	3084	3210	3944.31	4881.38	5875.46	6800.46	7812.62	8975.92	10221	11176.8	11634.7	12470.9	13554.3
15 Consumer price index (annual average)	(1989=100)	100	111	179	197	242	275	302	319	339	362	400	448	481
16 Real consumer wage index	(1989=100)	100.0	93.9	71.6	80.5	78.6	80.3	83.9	91.1	97.8	100.2	94.3	90.3	91.4
17 Growth rate	in %	-	-6.1	-22.3	8.9	-1.9	1.6	3.6	7.2	6.7	2.4	-5.9	-4.1	1.2
18 Labour productivity index	(1989=100)	100.0	99.1	98.9	92.0	88.7	97.4	101.9	104.1	110.9	115.6	120.8	125.3	128.1

- not available

Note: <sup>1)</sup> 1989-1993: Estimate based on growth rates reported in EBRD Transition Report 1997 and 1999

<sup>2)</sup> Based on Labour-related Establishment Census (CA); 1989-1990 according to ISIC-Rev2 and 1991 onwards ISIC-Rev3 standard.

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex A (continued)

Indicator	Measure	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Slovenia</b>														
1 Population	in 000	1,999	1,998	2,002	1,997	1,967	1,989	1,990	1,991	1,986	1,983	1,986	1,989	1,992
2 Working age (15-64 years)	in 000	1,371	1,382	1,382	1,382	1,381	1,381	1,381	1,383	1,386	1,388	1,391	1,393	1,394
3 Labour force	in 000	989	987	991	992	979	993	996	999	1,000	1,000	1,004	1,009	1,009
4 Real GDP <sup>1)</sup>	in bn SIT	1,700	1,620	1,476	1,396	1,435	1,511	1,573	1,628	1,703	1,768	1,860	1,945	2,004
5 Growth rate	in %		-4.7	-8.9	-5.4	2.8	5.3	4.1	3.5	4.6	3.8	5.2	4.6	3.0
6 Index	(1989=100)	100.0	95.3	86.8	82.1	84.4	88.9	92.5	95.8	100.2	104.0	109.4	114.4	117.9
7 Total employment <sup>2)</sup>	in 000	984	945	897	860	845	851	882	878	898	907	892	894	914
8 Growth rate	in %		-3.9	-5.1	-4.1	-1.8	0.7	3.6	-0.5	2.3	1.0	-1.7	0.2	2.2
9 Index	(1989=100)	100.0	96.1	91.2	87.5	85.9	86.5	89.6	89.2	91.3	92.2	90.7	90.9	92.9
10 Unemployment (registered)	in 000	28.22	44.62	75.08	102.59	129.09	127.06	-	-	125.19	126.08	118.95	106.6	101.86
11 Rate	in %	2.9	4.7	8.2	11.5	14.4	14.4	-	-	-	-	-	-	-
12 Unemployment (ILO definition)	in 000	-	-	-	-	85	85	70	69	69	75	71	69	57
13 Rate	in %	-	-	-	-	9.1	9.0	7.4	7.3	7.1	7.7	7.4	7.2	5.9
14 Average monthly earnings (agriculture excluded)	in SIT	2122	10165	16770	50869	75340	94608	112046	129214	144378	157961	173164	191656	214896
15 Consumer price index (annual average)	(1989=100)	100	650	1805	5547	7372	8920	10124	11126	12061	13014	13808	15037	16300
16 Real consumer wage index	(1989=100)	100.0	73.7	43.8	43.2	48.2	50.0	52.2	54.7	56.4	57.2	59.1	60.1	62.1
17 Growth rate	in %		-26.3	-29.9	-0.6	4.9	1.8	2.2	2.6	1.7	0.8	1.9	1.0	2.1
18 Labour productivity	(1989=100)	100.0	99.2	95.2	93.9	98.3	102.8	103.2	107.3	109.8	112.8	120.7	125.9	126.9

- not available

Note: <sup>1)</sup> 1989: Estimate based on growth rate reported in EBRD Transition Report 1997

<sup>2)</sup> 1989- 1993: Estimate based on growth rates reported in EBRD Transition Report 1997

Sources: rows 1-4: World Bank, World Development Indicators database; rows 7, 10-14: ILO, LABORSTA database; row 16: EBRD, Transition Reports, various years; author's calculations.

## Annex B.1: Data Entering Regressions Presented in Table 7

Country	Dependent variables		Independent variables		
	Unemployment rate (ILO def.), average annual change in percentage points	Total Employment, average annual growth rate 1993-2001	Real wages, average annual growth rate 1993-2001	Real GDP, average annual growth rate 1993-2001	Gini coefficient for the earnings distribution, average 1993-1998
Bulgaria <sup>1)</sup>	1.43	-1.77	7.46	3.92	0.27
Czech Republic	0.48	-0.32	4.71	2.30	0.26
Estonia	0.75	-2.35	5.61	3.96	0.36
Hungary	-0.78	0.10	1.41	3.53	0.33
Latvia <sup>2)</sup>	-1.02	-1.86	3.26	3.84	0.29
Lithuania <sup>3)</sup>	-0.06	-1.93	5.87	1.89	0.33
Poland	0.56	-0.73	6.25	4.85	0.36
Romania <sup>4)</sup>	0.79	-0.45	3.37	1.93	0.31
Slovenia	0.69	0.99	3.23	4.26	0.30
Slovak Republic <sup>3)</sup>	-0.46	-0.46	1.90	4.22	-

- not available

Note: <sup>1)</sup> 1997-2001 only; <sup>2)</sup> unemployment rate 1995-2001; <sup>3)</sup> unemployment rate 1994-2001; <sup>4)</sup> 1998-2001 only.

Sources: author's calculations based on data in annex A, rows 6, 9 and 13; table 4.

## Annex B.2: Data Entering Regressions Presented in Table 8

### Dependent Variables

Country	Unemploy-ment rate (ILO def.), average 1993- 2001	Employment-to- population ratio, average 1993- 1998	Real wages, average annual growth rate 1993-2001	Labour productivity, average annual growth rate 1993-2001	Gini Coefficient for the earnings distribution, average 1993- 1998	Share of long- term unem- ployment in total unem-ployment, average 1994- 2001	Average job tenure (in years), average 1993- 1999	Share of temporary employment, average 1992- 1999	Labour turnover rate, average 1993-1999
Bulgaria <sup>1)</sup>	16.3	53.3	33.4	14.5	0.27	58.6	-	-	51.6
Czech Republic	5.9	67.4	44.5	23.0	0.26	35.5	8.3	6.9	30.5
Estonia	10.2	63.5	54.8	64.9	0.33	44.7	7.0	4.9	42.8
Hungary	8.7	54.3	11.9	30.9	0.36	49.1	8.6	5.9	-
Poland	13.7	58.1	62.4	54.8	0.36	38.8	11.5	5.6	44.7
Slovak Republic <sup>3)</sup>	14.6	59.8	16.3	44.4	-	49.8	-	-	-
Slovenia	7.6	64.4	29.0	29.1	0.30	62.5	12.3	10.0	30.9

### Independent Variables

Country	Overall EPL index	EPL subindices		
		Legislation on permanent contracts	Legislation on temporary contracts	Legislation on collective dismissals
Bulgaria	2.8	2.3	2.5	4.8
Czech Republic	2.1	2.8	0.5	4.3
Estonia	2.6	3.1	1.4	4.1
Hungary	1.7	2.1	0.6	3.4
Poland	2.0	2.2	1.0	3.9
Slovak Republic	2.4	2.6	1.4	4.4
Slovenia <sup>2)</sup>	3.5	3.4	2.4	4.8

- not available

Note: <sup>1)</sup> 1997-2001 only; <sup>2)</sup> until 1999; <sup>3)</sup> unemployment rate 1994-2001.

Sources: data taken from annex A and tables 1, 3, 4, 5 and 6; author's calculations.

## Annex B.3: Data Entering Regressions Presented in Table 9

Country	Independent variable	Dependent variables					
	Minimum-to-average-wage ratio, average 1993-1998	Unemploy-ment rate (ILO def.), average 1993-2001	Youth unemployment rate, average 1994-2000	Employment-to-population ratio, average 1993-1998	Real wages, average annual growth rate 1993-2001	Labour productivity, average annual growth rate 1993-2001	Gini Coefficient for the earnings distribution, average 1993-1998
Bulgaria	30.42	16.26	16.63	53.26	33.37	14.46	0.27
Czech Republic	28.08	5.93	20.35	67.42	44.53	23.04	0.26
Estonia	32.66	10.18	26.05	63.48	54.78	64.91	0.33
Hungary	30.86	8.70	14.39	54.28	11.86	30.91	0.36
Lithuania	32.13	7.80	21.29	62.06	57.86	35.78	0.33
Poland	40.74	13.74	26.90	58.12	62.42	54.80	0.36
Romania	29.33	6.96	13.44	70.72	8.91	2.47	0.31
Slovak Republic	35.15	14.55	22.82	59.78	16.27	44.41	-

- not available

Source: data taken from annex A and tables 2, 3, 4 and 6.