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**Do labour market institutions
matter in transition economies?
An analysis of labour market
flexibility in the late nineties**

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TABLE OF CONTENTS

I.	Introduction	1
II.	Labour market institutions in the late 1990s: Transition versus OECD countries	2
	2.1. Employment protection legislation	3
	2.2. Unemployment benefit systems and active labour market policies	7
	2.3. Trade unions and wage bargaining	10
	2.4. Taxes on labour	11
	2.5. Conclusion: a set of labour market institutions broadly similar to the EU.	12
III.	The impact of labour market institutions on labour market outcomes	13
	3.1. Some principles governing the impact of labour market institutions	13
	3.2. Evidence in OECD countries	14
IV.	Preliminary evidence in transition countries	14
	4.1. Specification of the model	14
	4.2. Summary regressions explaining labour market outcomes	15
	4.3. Summary of the results	22
V.	Conclusion	22
	Annex 1- Methodological note on EPL indicators using OECD methodology	24
	Annex 2. Definitions and data sources	26
	Annex 3	28
	References	29

Do labour market institutions matter in transition economies? An analysis of labour market flexibility in the late nineties

Proleptically, I would say that whether we can measure something depends, not on that thing, but on how we conceptualize it, on our knowledge of it, above all on the skill and ingenuity which we bring to bear on the process of measurement which our enquiry can put to use. Abraham Kaplan.

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I. Introduction

The objectives of this paper are to develop initiatives on how to measure the flexibility of the labour markets of transition countries and shed some light on the ongoing debate on the role of labour market institutions in labour market performances. Labour market regulations are introduced with the objectives of improving workers' welfare through benefits or/ and social security programmes. But because benefits have costs, budget constraints need to be considered in policy choices: in a market economy benefits may then reduce employment, and employment protection may protect some workers (insiders) at the expense of others (youth, long-term unemployed, etc.). It is often argued for example, that the poor performance of European countries compared with that of the United States is due to labour market rigidities. It follows from this controversial argument that the road of maximal labour market flexibility should be taken (for example by weakening trade unions power and labour market regulations). This proposition has strong political implications, since it questions both the access to employment and the quality of this employment.

While more emphasis is given in this paper to employment protection legislation¹ (i.e. the limitations for employer to dismiss workers at will), other forms of labour market regulations are also considered, such as the unemployment benefit systems, wage setting institutions, active labour market policies and taxes on labour. It should be already noted, that the analysis of this paper deals with enterprises and workers in the formal sector, although the strong growth of the informal sector can be interpreted as part of the process of labour market flexibilization. As stated before, some of the institutional schemes have to do with the welfare state, as they provide income guarantees; when considered "too generous", they are accused of creating unemployment through two mechanisms: work disincentives and wage behaviour. Others may influence the wage structure and/or the labour costs.

¹ EPL relates to hiring and firing rules governing unfair dismissals, layoffs for economic reasons, severance payments, minimum notice period, administrative authorization for dismissals and prior discussion with labour representatives.

The “Eurosclerosis” debate (i.e. European labour market to be said “sclerotic”, because of their full range of labour protection) has renewed relevance with the possible enlargement of the European Union (EU hereafter) to Central and Eastern Europe countries (CEE countries). As the candidate countries are required to harmonize their laws and regulations with those of the EU (*acquis communautaire*), it is interesting to examine where CEE countries stand in terms of labour market flexibility/rigidities. The two key issues here are therefore: to first assess the extent to which these countries – and more generally the transition countries - have adopted the same labour market institutions as the EU; secondly, to assess the impact, if any, of these institutions on labour market performances. In a nutshell, this paper will try to answer the following question: do labour market institutions matter in transition countries and why? It opens with a presentation of a set of policies and labour market institutions during the 1990s for a group of nine transition countries (i.e. Bulgaria, the Czech Republic, Estonia, Hungary, Poland, Russian Federation, Slovakia, Slovenia and Ukraine). A special highlight is given to employment protection legislation, as new indicators are constructed following the methodology used by the OECD (1997; 1999). This makes it possible to compare the labour market institutions of the transition countries with those of the OECD countries², but also within transition countries. It should also be noted that this analysis is largely focused on numerical (external) flexibility, leaving aside other types of flexibility such as functional flexibility or flexibility in working hours. The second part presents some theoretical and empirical evidence based on western industrialized countries. The aim is to identify possible effects of the labour market institutions on the labour market performance of the selected transition countries. Finally, an econometric analysis is conducted to provide some preliminary evidence on the role played by these institutions in the context of the economic transition.

II. Labour market institutions in the late 1990s: Transition versus OECD countries

The disappointingly poor employment performance and persistent high unemployment in the transition countries of Eastern Europe³ (see table 1) may be explained by different factors, such as the ongoing macroeconomic and structural reforms (see the survey by Nesporova, 2002). Whether or not tight labour market regulations are also to be blamed for these poor labour market performances remains a hotly debated issue in Europe. Theoretical models provide some principles on how these regulations may affect labour market outcomes, but the relationship between the two is mainly an empirical question. However, measuring the degree of flexibility of labour markets is a difficult task. Quantitative measures can be readily computed for some aspects like the level of severance payment or unemployment benefit, the percentage of persons covered by the unemployment benefit schemes or the weight of tax burden. But other aspects are more difficult to measure precisely, notably in the field of employment protection, for example, the willingness of labour courts to entertain law suits by fired workers or interpretation of the notion of “juste cause” for termination (see Bertola, Boeri, Cazes, 2000).

² Here we call OECD countries, “western OECD” countries for comparative purpose, aware that Poland, Hungary, the Czech Republic and the Slovak Republic belong to the organization.

³ Including the Baltic States and the Commonwealth of Independent States.

Table 1. Unemployment rates of selected transition countries over the 90s

Country	Unemployment rates (%)		
	1994	1998	2000
Bulgaria	20.5	14.4	18.7
Czech Republic	4.1	7.3	8.8
Estonia	7.6	9.9	13.5
Hungary	10.7	7.8	6.6
Poland	13.9	10.5	16.6
Russian Fed	8.1	13.3	13.4
Slovakia	13.7	12.5	19.1
Slovenia	9.0	7.7	7.1
Ukraine	n.a.	11.3	11.9

Sources: national sources for LFS.

Bearing the caveats in mind, it is still possible to consider a set of institutional features and compare various countries on the basis of several indicators characterizing the system. This approach builds on work done by Nickel (1997), Layard and Nickell (1999) and the OECD in the Employment Outlook (1999), but goes much further taking into account the availability of information and the specificity of the transition countries. The paper starts with a description of selected labour market institutions and policies in nine transition countries, and then a comparison is made with the institutional settings of the EU and western industrialized countries (later OECD countries). The institutional package considered in this paper refers to the following provisions: employment protection legislation; various features of the unemployment insurance schemes and of active labour market policies; indicators of trade union strength; and the tax burden (payroll taxes). Each of these features is examined and commented the rest of that section.

2.1. Employment protection legislation

Employment protection legislation (EPL) refers to hiring and firing rules. As stated previously, while these rules are designed to “protect” the welfare of workers, they also induce costs for employers. Under the centrally planned economic system workers enjoyed a fairly high degree of employment protection in their jobs. This high degree of employment protection, combined with high wage compression, led to extreme labour rigidity and inefficient labour allocation. Over the 1990s, the need for rapid structural adjustment of the transition economies after the introduction of economic and social reforms was reflected in profound amendments to national EPL at the start of economic and social reforms. The objective was to facilitate workforce adjustment for firms in order to make enterprises more flexible and economically competitive while guaranteeing employment protection for workers comparable with that prevailing in developed market economies. This led to substantial moderation of workers’ protection, in general, which was made possible also due to the weakening of trade union power. Over the 1990s, the EPL was amended several times after heated discussions with the social partners, resulting in a certain re-tightening of employment protection in some countries and its further moderation in others. Nevertheless, the differences among the transition countries persist.

Measuring EPL is a most difficult task and depends very much on the availability of the data. For western industrialized countries, various summary indicators are available from the

OECD to describe the “strictness” of employment protection in each country (ordinal and cardinal measurement). Roughly speaking, the countries of Southern Europe have the strictest regulations and these regulations get weaker as one moves further North. Switzerland, Denmark and the United Kingdom have the weakest laws in Europe (the United Kingdom being broadly comparable with the United States). For comparative purposes, various EPL indicators are constructed for the selected transition countries, using the OECD methodology (OECD, Employment Outlook 1999). These indicators are based on very detailed normative information, which is coded and aggregated according to a weighting scheme (see annex 1). This first level of aggregation covers twenty-two items, some readily available in quantitative form (for example notice periods), and some obtained from qualitative information (difficulty of dismissals). Information for the transition countries comes from the recent expertise of national lawyers⁴ and a study launched by the World Bank on the same issue (Riboud et al., 2001).

Table 2. EPL indicators in selected transition countries, late 1990s*

Country	Max pay & notice period (1)	Difficulty of dismissals (2)	Index for regular contracts (3)	Index for reg. & temporary contracts (4)	Index for reg. & temp contracts & collect. dismissals (5)
Bulgaria	7	2.9	2.3	2.5	2.8
Czech Republic	5	3.2	3.0	1.8	2.2
Estonia	8	2.9	2.9	2.1	2.4
Hungary	8	2.5	2.1	1.5	1.8
Poland	3	2.7	2.3	1.7	2.0
Russian Fed (a)	5	3.5	3.3	2.9	3.2
Slovakia	4	2.4	2.6	1.9	2.3
Slovenia	16	4.5	3.4	3.0	3.3
Transition average (a)	-	3.1	2.7	2.2	2.5
EU average (b)	-	-	2.4	2.2	2.4
OECD average (c)	-	-	2.0	1.9	2.0

Source: author's calculations; OECD, 1999; and Riboud et al., 2001

* Note: These estimates are given for 1999, i.e. before the recent revisions of the labour codes of Bulgaria, the Russian Federation and Slovenia.

(1) The sum of maximum notice and severance pay, in months (author's calculations).

(2) Covers the strictness of the legal definitions of unfair dismissal, the frequency of verdicts involving the reinstatements of the employees and the monetary compensations typically required in the case of unfair dismissals

(3) Summary score for overall strictness of protection against dismissals.

(4) Weighted average of indicators for regular contracts and temporary contracts.

(5) Weighted average of indicators for regular contracts, temporary contracts and collective dismissals.

(a) Unweighted averages for transition, EU and OECD countries.

(b) Does not include Greece and Luxemburg

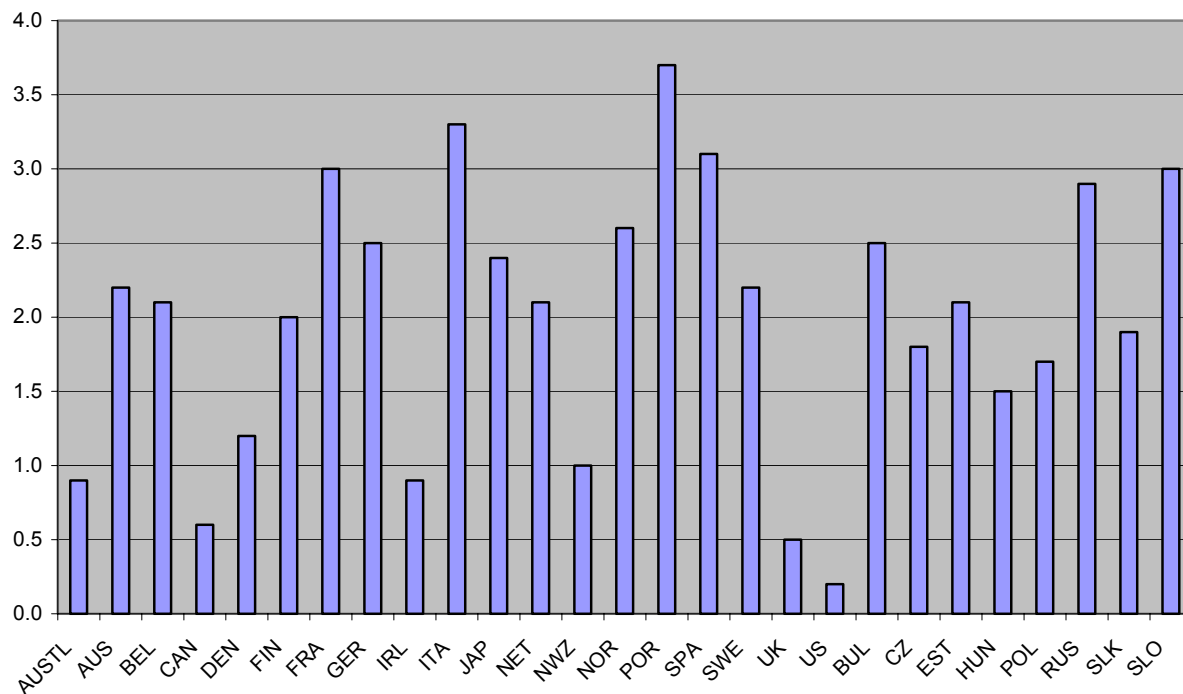
(c) Selected OECD countries

⁴ Bulgaria, Estonia, Poland, Russian Federation and the Czech Republic, see also the series of the ILO Employment papers.

Basically, the indicators take whole number values from 1 to 6: countries with very flexible EPL have a low overall index (close to 0 or 1), and those with a very strict legislation have a high index (5-6). Table 2 indicates that transition countries do not constitute a homogeneous group: when the indicator of strictness of the legislation of the selected countries is compared, Hungary, Bulgaria and Poland are amongst the most flexible for *regular employment*, followed by Estonia and the Czech Republic, while the Russian Federation has the most restrictive EPL. If regulations on regular and temporary employment are considered Hungary takes the lead as the least restrictive country, closely followed by Poland and the Czech Republic, with the Russian Federation and Slovenia on the opposite side of the scale. Finally, the indicator measuring the overall EPL strictness shows the lowest value for Hungary and Poland and the highest value again for the Russian Federation and Slovenia. The results prove that substantial disparities do exist among the transition countries, with Hungary having the most flexible legislation, closely followed by Poland and the Czech Republic, while the Russian Federation and Slovenia tend to be the most restrictive.

As mentioned before, differences also exist among OECD countries (see Nickell, 1997; OECD, 1999; Bertola et al., op.cit. 2000). Indeed, there is a large diversity within this group of countries, between the strictness of the employment legislation in the United States or the United Kingdom and Southern Europe countries (figure 1). In fact, considering the full sample of the twenty seven selected countries, it can be seen that cross-country differences are not so much between transition and OECD countries as the average of the selected transition countries is at the same level of the EU countries and slightly above OECD average for the two indicators covering (i) legislation on permanent and temporary contract and (ii) same plus legislation on collective dismissals (respectively 2.2 and 2.5). If the Russian Federation and Slovenia are excluded, the average of the transition countries is even below the EU average. Finally, it seems that when reforming their legislation, transition countries were influenced by their immediate western neighbours: this is reflected in the overall employment protection ranking, for example in the case of Estonia and Norway or Slovenia and Italy.

Figure 1. EPL overall index in selected OECD and transition countries, late 90s, Range 1 (low) to 6 (high)



Source: author' calculations, OECD, 1999 and Riboud et al., 2001

2.2 Unemployment benefit systems and active labour market policies

The transition economies have introduced a wide range of labour market programmes, both active and passive. The aim of these policies was to relieve tensions in the labour market and provide income support. Passive policies included unemployment insurance schemes and early retirement, while active policies encompassed job mediation, labour market training, public works, job creation, subsidized employment or mobility measures, as presented in more detail below.

2.2.1. Unemployment benefit schemes

Over the decade, unemployment insurance system has increasingly become less generous. This tendency can be captured by the evolution of the level and the duration of the benefit, as well as the eligibility rules. Table 3 presents the main features of the unemployment insurance system in the selected transition countries: replacement rates, (that is the share of income which is replaced by the unemployment benefit, with two different rates have been calculated), the duration of the benefit, and the share of benefit recipients in total registered unemployment.

Again, diversity prevails. Initial rates (i.e. the ratio of initial (highest) benefits to previous earning wages) of benefits in the selected transition countries range from 40 to 75 per cent, with the exception of the two extremes: Estonia (10 per cent) and Ukraine (100 per cent). An alternative way to compare the benefit level across countries is to express the average benefit as percentage of the average wage (second column of table 3). Countries also differ in terms of benefits duration. For instance, the maximum duration ranges from six months in the Czech Republic or Estonia to twenty four months in Slovenia or the Russian Federation in the late 1990s). These figures are in the same line that those in the EU and the OECD countries (with even unlimited duration in some EU countries). Another interesting feature of the unemployment insurance refers to the coverage rates of the unemployment benefit system, i.e. the percentage of unemployed receiving unemployment insurance benefits. These rates display great diversity across countries (from about 20 to 90 per cent); in particular, their development over the decade has been different: while they remained fairly stable in the Czech Republic, Estonia and Hungary, the coverage rates have fallen continuously in Poland and Slovakia (and to a lesser extent in Slovenia).

These differences are reflected in the level of spending in labour market programmes devoted to passive policies (table 4). Despite the general modest level of expenditures - transition countries spend less than 1 percent of their GDP on unemployment insurance - differences are quite marked between Slovenia or Hungary (respectively spending 0.9 and 0.56 per cent of their GDP in passive programmes) and Estonia (spending less than 0.10 per cent). Generally, these figures are still lower than those of the EU countries which devote on average 1.73 per cent of its GDP. The same conclusions can be drawn comparing the spending per unemployed person.

Table 3. Characteristics of the Unemployment insurance system in selected transition countries, 1998

Country	Benefit replacement ratio (1)	Benefit replacement ratio (2)	Benefit duration (3)	Coverage rates (4)
Bulgaria	60 %	32 %	6-12 months depending on age and length of employment	24.8 %
Czech Republic	60 %	24 %	6 months	48.8 %
Estonia	7 % (a)	7 % (a)	6 months	59.3 %
Hungary	65 %	27.5 %	3-12 months depending on length of employment	73.9 % (b)
Poland	40 %	36 % (c)	12 months	23.1 %
Russian Fed	75%	25.5 % (d)	12-24 months within 36 months	89.5 %
Slovakia	60 %	32.8 %	6-12 months depending on length of employment	27 %
Slovenia	63 %	43.9 %	3-24 months depending on length of employment	32.6 %
Ukraine	100 %	22.7 %	180-360 days within 2 years	53.1 %

Sources: Nesporova (1999), communication from the NES, Riboud et al. (2000).

(1) UB replacement rate is measured by the average benefits as a percentage of gross average wage.

(2) Initial benefits level divided by previous earned wage.

(3) Duration of payment

(4) Percentage of unemployed receiving unemployment insurance benefits.

(a) Flat rate of EEK 300

(b) The ratio includes means-tested unemployment assistance, once UB are exhausted. In contrast with other transition countries this de facto social assistance is paid from the Labour Market Fund while in other countries it usually is paid from social budgets.

(c) Flat rate of 393.60 Polish zloty in June 1999.

(d) It broadly corresponds to 42 per cent of the national subsistence level in 1997

2.2.2. Active labour market policies

Most of the reviewed transition countries have adopted a package of active labour market policies (ALMP) similar to those in OECD countries, including job mediation and counselling, vocational guidance, labour market training, employment subsidies, direct job creation, small business promotion and measures targeted at youth or disadvantaged groups. A detailed presentation of the programmes can be found in Nesporova (1999). There are large differences with

regard to with regard to the number of participants in and resources devoted to active labour market policies, as well as the distribution between different active programmes by country. Given the wide range of programmes, the scope of this cross-country comparison is limited to spending on ALMP. Among the transition countries, Slovenia is the leader in spending on active labour market programmes while Estonia spends ten times less. However, on average the level of expenditures on ALMP is rather low, ranging between 0.08 (Estonia) and 0.83 (Slovenia) per cent of GDP. Adjusting these figures for the unemployment rate⁵, confirms that transition countries do not spend large amounts on active policies: from about 0.002 (the Russian Federation) to 0.11 (Slovenia) per cent GDP for one per cent of the (LFS) unemployment rate in 1998 (table 4). These figures are close to some OECD countries that have low expenditures on ALMP, such as the United States or Japan⁶.

Table 4. Spending on passive and active labour market policy, 1998

Country	Total expenditure as % GDP (1)	of which: Passive policies (2)	of which: Active policies (3)	Passive spending per unemployed person (4)	Active spending per unemployed person (5)
Bulgaria	0.80	0.46	0.12	0.029	0.007
Czech Rep.	0.40	0.26	0.05	0.036	0.007
Estonia	0.20	0.10	0.07	0.010	0.007
Hungary	1.30	0.91	0.28	0.117	0.036
Poland	1.00	0.59	0.30	0.056	0.028
Russian Fed	0.20	0.13	0.02	0.010	0.002
Slovakia	1.10	0.56	0.32	0.044	0.026
Slovenia	1.72	0.89	0.83	0.110	0.110
Ukraine	0.30	0.19	0.03	0.017	0.003
EU average	-	-	-	1.16	0.16
OECD aver.	-	-	-	0.92	0.14

Sources: Table 3 in Nesporova (2002); National Employment Services. Riboud et al. (2000)

The difference between column (1) and column (2) and (3) relates to the costs of running national public employment services.

(1) Spending per unemployed: ratio of GDP spending on LMP to LFS unemployment rates

(4) Spending per unemployed: ratio of GDP spending on UI to LFS unemployment rates

(5) Spending per unemployed: ratio of GDP spending on ALMP to LFS unemployment rates

⁵ By calculating the ratio of GDP spent on active labour market policy to LFS unemployment rate (both in percentage terms).

⁶ Indeed, there are substantial differences among OECD members: the Netherlands and Denmark are among the "high spending" OECD countries, with 0.55 and 0.34 per cent of GDP spent on active policies per one per unemployed (against 0.16 and 0.14 per cent on average for the EU and the OECD respectively, see Riboud & alii, 2000).

2.3. Trade unions and wage bargaining

In most countries, trade unions play a major role in the collective bargaining process⁷ and are therefore likely to influence the wage formation and labour costs. Even in countries where the number of unionized workers is low, collective agreements can actually cover a large share of workers. This is the case for example of France and Spain. Another relevant aspect to consider regarding unions is the extent to which they manage to coordinate their wage setting activities together with employers' organizations⁸. In table 5, the key features of the trade unions are summarized: namely, the union density, collective agreements coverage, and levels of coordination. Coordination may be distinguished from centralization, which refers to the level of the bargaining (plant, firm, industry, country). Highly coordinated bargaining is not necessarily centralized, as in Germany or Denmark for example. While empirical research has generated datasets on unions and employers organizations for OECD countries (see Calmors and Drifill (1988); Layard and al., (1991) and ILO (1997)), few data are available for transition countries.

Before 1990, the industrial relations systems of transition countries were characterized by central political and managerial control exercised by the state. During the decade, efforts were made to develop industrial relations typical for a market economy. CEE countries have all started to move away from a centralized wage setting system, towards a collective bargaining system in the enterprise sector⁹. According to available data, the percentage of trade union membership ranges from about 34 per cent in Poland to 74 per cent in the Russian Federation. Collective bargaining coverage (i.e. the number of workers, unionised or not, who have their pay and working conditions determined by collective agreements in the enterprise sector), however, is high (over 70 per cent) in most transition countries except in Bulgaria, Czech Republic and Estonia – see again table 5). Yet, despite a rather homogeneous cross country picture indicating a rather high level of union membership and coverage, significant differences have emerged between the public and the private sectors, with much lower unionisation of workers in the latter sector. Moreover, unions' negotiation power depends very much on their coordination ability with employers, which is now actually rather low in most of the transition countries¹⁰.

In contrast, OECD countries display greater diversity. Both the percentage of employees who belong to a trade union and are covered by collective agreements differs widely across countries. Trade union density ranges between less than 10 per cent in France compared to 82 per cent in Sweden. In the United States, less than 25 per cent of workers have their wages determined by collective agreements, while this percentage is above 70 per cent in most of the OECD countries (see Layard, Nickell (1999), ILO (2000)). Furthermore, the degree of coordination varies across countries. The most coordinated unions/employers organizations are those of Scandinavia and Austria, followed by continental Europe. The Anglo-Saxon countries show little coordination, despite high levels of trade union density and coverage in some cases, such as in Ireland (OECD (1997), Nickell (1997)). Generally, it could be said that workers in transition countries are still more

⁷ These negotiations can take place at the plant, firm, industry or national level.

⁸ Actually, the involvement of the government in the negotiation process is another relevant aspect (see again the case of France)

⁹ See for example the publications from the ILO-CEET on social dialogue in CEE countries – <http://www.ilo-ceet.hu>

¹⁰ The level of coordination was quite high until the mid-1990s due paradoxically to tax based income policy imposed by the government. When this tax-based income policy, much opposed by the social partners, was eventually abolished around 1995 the coordination ability of the trade unions has gone down.

unionised than in the EU or OECD while as for the strength of trade unions and coordination of collective negotiations these countries fall more or less within the average of the OECD countries.

Table 5. Trade unions and collective bargaining, mid-1990s

Country	Union density % (1)	CB coverage (2)	Degree of coordination (3)
Bulgaria	58.2	2	3
Czech Republic	42.8	2	1
Estonia	36.1	2	1.5
Hungary	60.0	3	1.5
Poland	33.8	3	1.5
Russian Fed	74.8	3	3
Slovakia	61.7	3	2
Slovenia	60.0	3	3
Ukraine	100	3	3
EU average	44.4	-	-
OECD average	39.6	-	-

Sources: column 1 from ILO (1997), Visser and OECD (1999); columns (2) and (3) from Riboud et al., op. cit. and authors' calculations from Arro et al (2001), Beleva et al (2001), Kwiatkowski, Socha, Sztanderska (2001), Tchetchernina et al (2001) and Vecernik (2001).

(1) Percentage of salaried workers that belong to a trade union.

(2) Collective bargaining coverage index takes a value of 1 when collective agreements cover less than 25 per cent of all salaried workers, 2 if this number is between 26 and 69 per cent and 3 when coverage is above 70 per cent.

(3) The degree of union and employer coordination is measured through an index that ranks from 1 (low) to 3 (high). The overall coordination is obtained as the average of union and employer coordination.

2.4. Taxes on labour

Usually, economists include payroll taxes, income taxes and consumption taxes under this heading, the argument being that the impact of taxation on the labour market operates via the wedge between the real labour cost and the real consumption wage received by the worker. This paper focuses only on the payroll taxes for two reasons: first, it can be argued that not only workers but also unemployed and inactive persons pay income and consumption taxes, and second, it is extremely difficult to construct a tax wedge based on reliable and consistent information on value-added taxes (VAT) and income taxes for all the selected transition countries¹¹.

Payroll taxes (defined as the difference between real labour cost paid by employers and after tax real consumption wage received by workers) in transition countries are high, even for EU standards. Rates range from 33 per cent in Estonia to as high as 50 per cent in Slovakia. While these rates vary enormously across OECD countries, they do not exceed 40 per cent: payroll taxes stretch from almost zero in Denmark to 38.8 per cent and 40.2 per cent in France and Italy respectively in the mid-nineties (Figure 2). In transition countries, deteriorating labour market outcomes push

¹¹ The income tax schedule is progressive in all the countries and the degree of progressivity is important. In a number of countries, in particular small firms officially pay the minimum wage to their employees for tax reasons while paying another part of the wage under the table.

governments to increase the levels of public expenditures on unemployment insurance systems and active labour market policies.

The ageing population, declining employment rates and elevated poverty levels put additional constraints on the funding of public pension schemes, health care and social welfare. Simultaneously, fiscal revenues considerably fall especially in periods of economic contraction, generating a very strong pressure on maintaining high payroll taxes. With respect to negative effects of high taxation on employment and business development some countries started to lower their payroll taxes and saw amendments and fiscal reforms taking place, though at a slow and gradual pace over the decade. Recently, for example, in Hungary employers' social contributions were cut by 2 percentage points to 31 per cent at the beginning of 2001.

Figure 2. Tax burden on labour in selected OECD and transition countries.



Sources: OECD, 1999; Riboud; national sources.

2.5. Conclusion: a set of labour market institutions broadly similar to the EU.

To summarize the previous sections, it could be said that at the end of the nineties, most of the selected transition countries (mainly the CEE countries) have adopted a set of labour market institutions that broadly resemble those in the EU countries. Therefore, adding the nine transition countries to the group of OECD ones does not seem to increase sharply the sample diversity according to the evidence presented before. In general, transition countries opted for a rather average institutional package, neither the most nor the least flexible model. The case of the employment protection legislation is straightforward, placing the transition countries in the middle

range of the flexibility scale. One exception to this pattern is for payroll taxes, which are clearly much higher (in relative terms) in the transition countries.

III. The impact of labour market institutions on labour market outcomes

3.1. Some principles governing the impact of labour market institutions

The strictness of the employment protection legislation may affect both employers' and employees' decisions: the main argument for employment protection relates to worker welfare, implicit contracts, the advantage of a stable employment relationship encouraging investment in human capital, and the social cost of dismissals and macro-economic stability. The main argument against employment protection is that it constrains firms' behaviour raising labour costs and hence may reduce total employment (a complete survey of the principles governing the impact of hiring and firing rules can be found in Cazes & Nesporova, 2003).

The net impact of these favourable and unfavourable effects on labour costs, employment and productivity is likely to vary between size of firms, type of activity and according to the economic conditions. In a nutshell, stricter employment protection legislation may contribute to lower participation rates and employment, and higher unemployment rates, in particular long-term unemployment. It may also contribute to significant labour market segmentation by guaranteeing high job stability and security for regular workers, while increasing labour turnover and uncertainty for the others (in particular youth and women with family responsibilities). From a dynamic perspective (i.e., considering jobs or workers flows instead of stocks), theoretical models show rather clearly that employment should be more stable and individual employment relationships more durable when EPL is stricter. In other words, stringent EPL reduces hiring and firing.

Theory also suggests that generous benefit systems influence the labour market outcomes via two mechanisms: they discourage job search by the unemployed (by increasing their reservation wage) and they reduce the "fear" of unemployment, and hence create upward pressure on wages from employees (via unions, for example).

How do unions affect the labour market? Trade unions, and more generally the industrial relations systems, play a crucial role in determining wage flexibility in response to economic shocks: according to certain characteristics and factors (such as the degree of coordination in wage bargaining, the level at which bargaining takes place, the union density and the coverage rate of collective bargaining, etc.), trade unions may influence the wage negotiation process through the setting of the minimum wage, bargaining about wage increases and shaping of the wage structure. Co-ordination is a particularly important aspect to ensure consensus in bargaining on macro-economic objectives: wage increase negotiations may for example take the precedence over negotiations on other issues, creating upward wage pressure and higher equilibrium unemployment (see for example Bertola (1990)); but unions may also set employment goals and accept wage restraint, trading wage moderation against additional employment creation (see for example the importance of the social partners in the Dutch labour market success story, Hartog (1999)). The three indicators presented in the table 5 are likely to shape and partly reflect the key variable to influence labour market outcomes, namely trade union policy. Finally, the direct impact of the minimum wage on unemployment is not taken into account in this book for several reasons: first because the analysis focuses on employment flexibility (numerical flexibility), and second as both

the level of the minimum wage¹² and the percentage of workers actually earning it are still very low in most transition countries so that the minimum wage largely loses its economic and social role there¹³.

3.2. Evidence in OECD countries

Empirical analyses conducted for western industrialized countries provide ambiguous results. The main findings can be summarized as follows (OECD Job study 1994; Employment Outlook 1999; Nickell 1997, Bertola et al. (1999), etc.). Generally, employment protection legislation (EPL) has little or no effect on overall unemployment, but it may affect its duration - unemployment duration increases with stricter EPL - and its demographic composition, as most studies confirm that stricter EPL stimulates an increase in the share of self-employment in total employment while the effect on temporary employment and part-time employment is ambiguous (seeming to mainly affect young workers). The OECD found also a clear negative correlation between EPL strictness and the participation rate across countries, but a positive effect on the employment rate for prime age men¹⁴. EPL also affects job and labour flows: labour turnover in general declines with stricter EPL and vice versa.

There seems to be still no link between EPL strictness and overall unemployment, if the other institutional settings are introduced in the empirical analysis. This may be due to collective bargaining at the central level that seems to mitigate any negative effect of stricter EPL on the level of unemployment. Empirical research on OECD countries indicates that long-term benefits may generate long-term unemployment. Less generous benefits however may not per se stimulate active job search and higher employment, which depends on the overall labour market situation and demand for labour, the size of the informal employment and demand for informal labour, the wage level offered in vacant jobs, the social welfare, etc. In contrast, active labour policies would facilitate re-entry into the labour market. Empirical research on OECD countries also confirms the greater impact of EPL on the dynamics and composition of unemployment than on its level. For example, studies find the existence of a strong negative correlation between EPL strictness and the inflow rate into unemployment and a positive correlation between EPL strictness and the duration of unemployment (detailed results are presented in Cazes & Nesporova, 2003).

IV. Preliminary evidence in transition countries

4.1. Specification of the model

The main features of the labour market institutions (here the independent variables), as well as their potential impacts on labour market outcomes, have been described in the two previous sections. The idea here is to consider theoretical and empirical evidence based on OECD countries and assume that labour market institutions affect (if they do so) labour market outcomes through the same mechanisms as OECD countries (e.g. one should refer to the expected effects on job search behaviour, bargaining power, turnover, etc.). In other words, the assumption which is made and

¹² In the vast majority of transition countries, the minimum wage is set by statute or decree.

¹³ In this respect, Poland may be an exception as some recent analyses (e.g. World Bank, 2001) suggest a negative impact of the minimum wage set around 40 per cent of the average wage on employment of low-skilled workers in less developed Polish regions due to much lower wage and price levels there.

¹⁴ Possibly at the detriment of youth, women and less skilled workers.

tested is that labour market outcomes of transition countries have similar responses to labour market institutions as OECD countries.

Data on labour market institutions have been gathered for twenty-seven countries. Two groups of countries have been considered: nineteen OECD countries and eight transition countries (Bulgaria, Czech Republic, Estonia, Hungary, Poland, Russian Federation, Slovakia, Slovenia)¹⁵. As it is obviously impossible to conduct an econometric analysis on the sole group of transition countries, the assumption tested statistically is that the labour markets of the two groups of countries have *a priori* similar behaviours *vis à vis* labour market institutions. The Chow statistic is used, which allows for a comparison of the stability of the coefficients for the two groups of data (see Annex 3). Therefore, a single pooled equation is first estimated on all twenty-seven countries (OECD plus transition), then again for the nineteen OECD countries, and the Chow statistic computed to test the similarity hypothesis.

Simple cross-country regressions are then conducted to address various aspects of unemployment (total unemployment, long-term and youth unemployment rates)¹⁶ and aggregate labour input (employment rate and labour force participation rate). A two-year average is used in order to smooth out the cycle and year-to-year noise (1996 and 1998); ideally an average for a longer period should be considered, but this empirical exercise is hampered by the lack of data¹⁷. Most of the independent variables have been presented in the previous sections and come mostly from OECD sources or national sources (for transition countries). Because labour market institutions influence the equilibrium unemployment rates while the actual unemployment rates are used as the dependant variables, an output gap¹⁸ is included, which is the deviation of output from a trend generated by the Hodrick Prescott filter (see annex 2 for a detailed presentation of the data and sources). The unemployment equation uses the log of unemployment as the dependant variable, in line with the previous theoretical and empirical research (see Nickell (1987), Blanchflower and Oswald (1994)). For the long-term and youth unemployment rates, the choice of the econometric specification between levels, log or semi-logarithmic is less obvious (see for example Mincer (1976), Bazin and Martin (1991) and Esping-Andersen (1999)). Different specifications have therefore been estimated.

4.2. Summary regressions explaining labour market outcomes

4.2.1. Unemployment

Table 6 presents the results of two different estimations of the overall unemployment rate. As this study is mainly focused on transition countries, the results are analysed in more detail for them, while western industrialized countries (hereafter OECD countries) are mainly used as a reference. The assumption that there is no behavioural difference between the OECD countries and the transition countries is first tested. The first column of table 6 reports a basic specification that includes labour market institutions' variables described above. A second version of this

¹⁵ We could not include Ukraine in the regressions as some data were missing.

¹⁶ Due to time and data constraints, we could not make estimations for the unskilled unemployment rate. In the future however, we are planning to extend our research to other dependant variables, such as unskilled unemployment rates, prime age employment rates as well as flows variables.

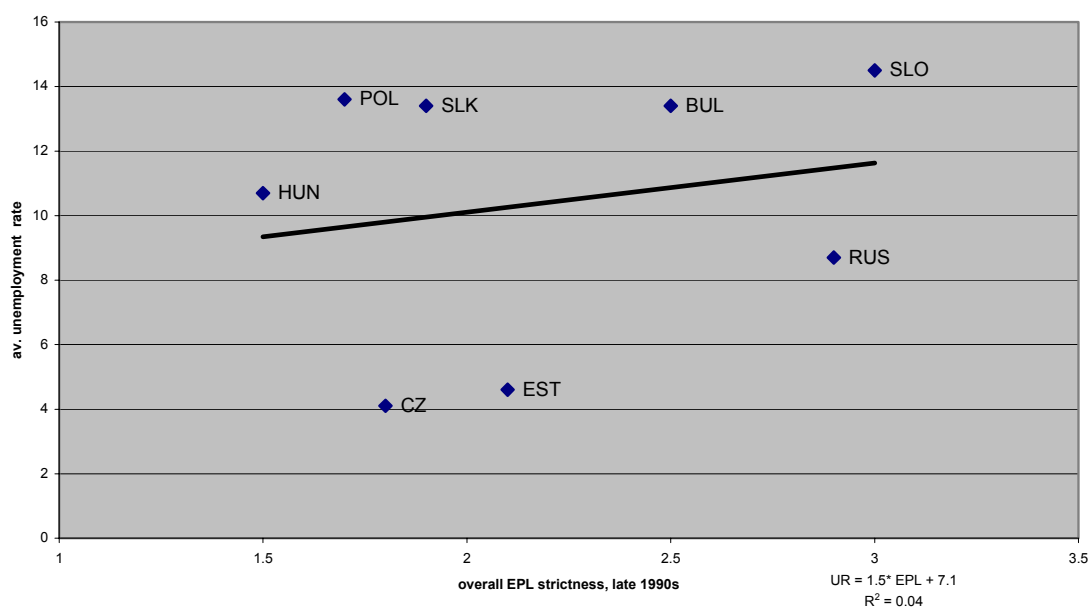
¹⁷ For example, most of the data come from LFS which have been launched only recently in some of the transition countries.

¹⁸ Another option –however not appropriate for transition countries- to capture this difference is to use the rate of change of inflation (for example, Nickell and Layard (1999)).

specification, which considers only the statistically significant variables is then presented in column (2), for respectively, the whole sample of countries and for the OECD countries only. In general, the coefficient value and significance of the variables have increased in this second version.

Table 6 suggests that the institutional variables that seem to have an impact on the overall unemployment rates are active labour market policies, collective bargaining coverage and labour tax (at ten per cent and twenty per cent levels respectively). The overall effect of the trade unions is yet statistically ambiguous. The regression coefficients of both the union density and collective bargaining coverage variables are positive, suggesting that powerful trade unions are inversely associated to a decrease in unemployment in line with theoretical expectations; however, these variables are not statistically significant in the first specification, and a good coordination between unions and employers organizations could offset the previous effect (with a coefficient of -0.22 for the union coordination variable). The various schemes of labour market policies have also different effects, although neither the replacement ratio provided by the unemployment benefit system nor the length of time for which the benefit is payable are significant. This may be explained by the presence of transition countries in the sample, which clearly exhibit less generous unemployment insurance schemes, notably regarding the duration of the benefits. The active labour market policy variable is statistically significant (at ten per cent level), which suggests that expansion of active labour market programmes may contribute to decrease the level of overall unemployment (with a coefficient of -0.02). On the other hand, the estimated coefficient for the tax burden on labour (i.e. payroll taxes in this analysis) is positive but low (0.01) and weakly significant (at twenty per cent), suggesting that higher payroll taxes may slightly increase the level of unemployment. Finally, the coefficient for overall EPL strictness is very small and statistically insignificant, in line with previous evidence presented for OECD countries and with a simple bivariate analysis, plotting the EPL indicator against unemployment rate (see figure 3). Comparing the two last columns of the table 6, it is interesting to note that the estimated coefficients are almost identical for the two samples of countries - OECD plus transition countries and OECD countries only.

Figure 3. EPL and unemployment rates, 1992-1998



Sources: for EPL measures: see table 2. For unemployment rate: average of LFS unemployment rates (1992-1998).

Table 6. Regressions with log unemployment rate as the dependant variable for the two groups of countries, late 1990s

Unemployment rate	OECD + CEE(a) (I)	OECD + CEE (II)	OECD (II)
Employment protection	0.06 (0.43)	-	-
Replacement rate	0.00 (0.36)	-	-
Benefit duration	0.02 (0.47)	-	-
Active labour market policies (b)	- 0.02 (-1.41)	-0.02 (-1.98)	- 0.02 (-2.01)
Union density	0.00 (1.08)	-	-
CB coverage	0.15 (1.08)	0.18 (1.59)	0.17 (1.30)
Union coordination	-0.22 (- 1.40)	-	-
Tax labour	0.01 (1.51)	0.01 (1.59)	0.01 (1.49)
Output gap	-0.11 (-2.36)	-0.10 (-2.33)	-0.23 (-2.57)
Adj.R2	0.58	0.50	0.60
Number of countries	27	27	19
Chow test (Fischer)	-	0.90**	-

Notes: Estimation is by OLS. T-students statistics are presented in brackets. For the Fischer statistics, ** means that the hypothesis of coefficients stability is accepted at the 5% level, see annex for more details on the Chow test.

(a) As explained before, the “OECD” countries actually considered in this paper are a group of 19 western OECD countries; “CEE” refers here to the group of the 8 selected transition countries (Ukraine was not included due to the lack of data).

(b) The variable measures the ratio of GDP spending on ALMP to unemployment rate, both in percentage terms. For use in the equations, the variable is instrumented. Because the ALMP variable refers to percent of GDP normalized on current unemployment, it is highly endogenous. So the current percent of GDP spent on active labour market measures is renormalized on the average unemployment rate in 1993-1994 to create the instrument. Insofar as measurements errors in unemployment are serially uncorrelated, this will help with the endogeneity problem.

Turning to the long-term unemployment rates¹⁹, the same results are generally obtained as for the overall unemployment rates (table 7). First, the hypothesis of stability of the coefficients is also accepted. Secondly, no evidence was found that employment protection legislation was

¹⁹ Several modal specifications have been tested to estimate the long-term unemployment (log and level); with an output gap (not significant) and with different indicators of employment protection strictness as independent variables. The regression coefficient of the ALMP variable is statistically significant in other specifications tested, in particular when the payroll tax variable is omitted and the Employment Protection variable is introduced. As already said, Employment Protection is not significant in the *log* of specification. However, this finding does not appear robust to the *level* specification, in which stricter protection (both indicators of EPL, considering regular and temporary employment and collective dismissals) increases the level of long term unemployment.

influencing the duration of unemployment, contrary to preliminary evidence based on bivariate analysis (see Cazes & Nesporova, 2003) and to the evidence found for OECD countries (a multivariate analysis conducted by the OECD (1999) showed a positive correlation between EPL strictness and the duration of unemployment). More generally, collective bargaining coverage and the payroll tax variables seem to have an impact on long-term unemployment, in the sense that an increase in these variables would tend to increase long-term unemployment. This finding confirms that the primary focus of collective bargaining has so far been on employment protection of workers covered and on negotiating wage increases, which leaves aside jobless persons and contributes to longer duration of unemployment. This calls for an extension of social dialogue to include policies promoting employment and combating unemployment. The regression coefficient of the duration of the unemployment benefit is also positive but not significant (in line with theoretical evidence). Here again, active labour market policies may partly offset the previous effects by decreasing the level of long-term unemployment (but the variable is weakly significant). The comparison of the regressions conducted for the two samples of countries suggests that the lack of statistical significance of the unemployment insurance variables is probably due to the presence of the transition countries, since the results for solely the OECD countries show stronger coefficients for the replacement ratio variable (see also Scarpetta, 1996).

Table 7. Regressions with log long-term unemployment rate as dependant variable for the two groups of countries, late 1990s (a)

Long term unemployment rate	OECD + CEE (I)	OECD + CEE (II)	OECD (II)
Employment protection	0.32 (1.02)	-	-
Replacement rate	0.00 (0.18)	-	-
Benefit duration	0.12 (1.03)	0.12 (1.32)	0.14 (1.40)
Active labour market policies (b)	-0.03 (-1.01)	- 0.04 (-1.54)	-0.04 (-1.42)
Union density	0.01 (0.66)	-	-
CB coverage	0.61 (2.03)	0.75 (3.02)	0.93 (3.21)
Union coordination	-0.39 (-1.09)	-	-
Tax labour	0.02 (1.20)	0.02 (1.95)	0.02 (1.18)
Output gap	0.004 (0.38)	-	-
Adj.R2	0.57	0.53	0.58
Number of countries	27	27	19
Chow test (Fischer)	-	0.75**	-

Notes: T-students statistics are presented in brackets. For the Fischer statistic, ** means that the hypothesis of coefficients stability is accepted at the 5 per cent level, see annex for more details on the Chow test.

(a) Variables and definitions are in table 6. Estimation is by OLS.

(b) Active labour market policies are instrumented as in previous tables.

As discussed before, labour market institutions may also affect youth unemployment rates. Table 8 presents two specifications. The first column reports the basic specification that includes all labour market institutions reviewed in that paper, which allows the comparison of the situation of

the youth on labour market *vis à vis* overall unemployment (see first column of table 6). The second version concentrates on the significant variables. Here again, the assumption that there is no behavioural difference between the OECD countries and the transition countries has been tested and accepted on the basis of the Chow test.

Table 8. Regressions to explain log youth unemployment rates as dependant variable for the two groups of countries, late 1990s (a)

Youth unemployment rate	OECD + CEE (I)	OECD + CEE (II)	OECD (II)
Employment protection	0.22 (1.38)	-	-
Replacement rate	0.00 (-0.25)	-	-
Benefit duration	0.12 (1.94)	0.11 (2.28)	0.13 (3.11)
Active labour market policies (b)	- 0.02 (-1.56)	-0.02 (-2.02)	-0.04 (-3.69)
Union density	0.01 (1.07)	-	-
CB coverage	-0.02 (-0.15)	-	-
Union coordination	-0.19 (- 1.05)	-	-
Tax labour	0.01 (2.0)	0.02 (3.60)	0.03 (4.90)
Output gap	0.10 (1.80)	0.10 (2.17)	0.15 (2.56)
Adj.R2	0.62	0.56	0.72
Number of countries	26	26	19
Chow test (Fischer)	-	2.01**	-

Notes: T-students statistics are presented in brackets. For the Fischer statistic, ** means that the hypothesis of coefficients stability is accepted at the 5 per cent level, see annex for more details on the Chow test.

(a) Variables and definitions are in table 6. Estimation is by OLS.

(b) Active labour market policies are instrumented as in previous tables.

Generally, the same set of variables explains youth unemployment rates and overall unemployment rates, except for trade unions which do not seem to have an impact at all on youth unemployment rates (none of the regression coefficients for the three “unions” variables is statistically significant, even at a low level); moreover, the duration of the unemployment benefit presents a significant statistical association with youth unemployment (in the sense that longer duration tends to increase it, with a coefficient of 0.11). In the same line, the labour tax variable is highly significant, as shown by table 8, and tends to increase youth unemployment rates. Active labour market programmes, at the opposite, tend to reduce it (see the second column of table 8). The main puzzling result concerns the influence of the output gap variable, which seems to be positively associated with youth unemployment rates (and negatively with overall unemployment). This result

is a priori unexpected and may be explained by different factors. The first possible explanation is that the estimated specification is not the appropriate one and some variables may be missing. Minimum wages or shortage of jobs indicators, for example, are variables usually considered in standard regressions of youth unemployment. These omissions could be captured by the output gap variable (see for example, Bruno & Cazes (1998)). Another explanation may be that if employers produce much below their potential, they do not need to increase their inputs (hire new workers, in particular young unexperienced ones) to better use their capacities. Moreover, they may adjust by laying off redundant workers, starting with young people (last in, first out). Finally, looking at rigidities, there is no evidence that employment protection influences youth unemployment, although a weak positive link may be found if the level specification is tested²⁰. This result is also consistent with bivariate analysis that finds no effect of employment protection legislation on youth unemployment in transition countries over the last decade (see, reference to Cazes & Nesporova, 2003).

4.2.2. Labour input

Table 9 presents the results of the regressions addressing two labour input measures, the employment to population ratio and the labour force participation (LFP) rate. As explained before, the impact of labour market institutions on unemployment or labour input arises from the theoretical mechanisms described above. However, it should be noted that other variables may contribute to explain variations across countries in labour input, such as early retirement, disability benefits and some factors influencing the participation of women, which have not been taken into account. Therefore, the labour input equations will tend to contain more unexplained noise.

First of all, the same set of variables appears to influence significantly both employment and labour force participation rates, that is, the collective bargaining coverage and coordination variables, employment protection legislation and active labour market policies. Employment protection is statistically significant (at ten per cent level), which was not the case for equations explaining the unemployment rate. It appears to reduce both the employment rates and the labour force participation rates. This effect seems to be partly counterbalanced by active labour market policy. The overall effect of the trade unions is again ambiguous. The regression coefficient of the collective bargaining coverage variable is statistically significant and negative, suggesting that a large coverage tends to reduce labour supply; but again, this impact can be partly counterbalanced if unions and employers organizations coordinate their collective bargaining activities. Finally, payroll taxes and unemployment benefits seem to have no statistical effect²¹ neither on the employment rates nor on the labour force participation rates.

However, these results seem to be mostly driven *by the group of OECD countries*. If the transition countries are excluded from the sample, stronger relationships can be found between

²⁰ As for long-term unemployment, several specifications have been tested to estimate the youth unemployment rate (log and level) with an output gap and with different indicators of employment protection strictness as independent variables. As already said, the employment protection legislation is not significant in the log specification. However, this finding does not appear robust to the level specification in which stricter protection (both indicators of EPL, considering regular and temporary employment and collective dismissals) increases the level of youth unemployment. This result applies to the transition countries as we accepted the hypothesis of stability of the coefficients on the basis of the Chow test.

²¹ This is in line with evidence on OECD countries, where this is generally the overall tax burden on labour (i.e. the tax wedge) that has a clear negative impact on employment rates (see for example, Nickell (1997) and Nickell, Layard (1999)).

employment protection legislation or collective bargaining institutions and employment and labour force participation rates (see table 9). Moreover, the active labour market policy variable is not statistically significant anymore. This is indeed confirmed by the straightforward conclusions of the statistical test on the behavioural difference between OECD and transition countries: it rejects the hypothesis of stable coefficients for the labour force participation rate, but accepts it for employment rate, the statistic for testing this latter stability being very close to the threshold of acceptance.

Table 9. Regressions with labour input measures as dependant variables for the two groups of countries, late 1990s (a)

	Employment rate OCDE + CEE	Employment rate OCDE	LFP rate OCDE + CEE	LFP rate OCDE
Employment protection	-2.93 (-1.74)	-3.71 (-2.11)	-2.87 (-1.97)	-3.41 (-2.54)
Replacement rate	-	-	-	-
Benefit duration	-	-	-	-
Active labour market policies (b)	0.52 (3.18)	0.19 (0.90)	0.26 (1.70)	0.12 (0.75)
Union density	-	-	-	-
CB coverage	-5.91 (-3.17)	-6.17 (-2.93)	-3.92(-2.28)	-4.18 (-2.60)
Union coordination	2.27 (1.29)	5.61 (2.61)	2.69 (1.69)	4.72 (2.87)
Tax labour	-	-	-	-
Output gap	-0.87 (-1.40)		-0.39 (-0.86)	
Adj.R2	0.63	0.69	0.57	0.70
Number of countries	27	19	27	19
Chow test (Fischer)	2.77**		3.20	-

Notes: T-students statistics are presented in brackets. For the Fischer statistics, ** means that the hypothesis of coefficients stability is accepted at the 5 per cent level, see annex for more details on the Chow test.

(a) Variables and definitions are in table 6. Estimation is by OLS.

(b) Active labour market policies are instrumented as in previous tables.

The previous findings suggest that different patterns characterize labour supply in transition countries compared to western industrialized countries. As it is obviously not possible to present the results of an econometric analysis solely based on the group of transition countries, correlation coefficients between employment protection legislation and labour force participation for both groups of countries were computed and compared: they systematically have the opposite sign, EPL

being positively correlated with labour force participation in transition countries (+0.3), while it is negative for OECD countries (around -0.5)²². This confirms that the results for employment rates in the total sample are mainly driven by OECD countries and should be used and interpreted with great caution for the transition countries. Finally, the stability of the regression coefficients was tested and rejected for labour force participation rates.

This is consistent with previous findings (see Cazes & Nesporova, 2001). One of our key findings is the tendency towards a counter-cyclical pattern of labour turnover coupled with a pro-cyclical pattern of job tenure, which is the opposite of what happens in the western industrialized countries. In this article, these differences are explained by the fact that labour reallocation in the transition countries has generally been driven more by the demand side (employers) than by workers' voluntary decisions because of their heightened perception of job insecurity. These results for labour force participation rates seem indeed to confirm this hypothesis.

4.3. Summary of the results

Generally, the hypothesis of non-stability of the coefficients of the two different groups of countries (the nineteen western OECD countries and the eight transition countries) was rejected. In other words, it can be said that the labour markets of these two groups of countries follow the same pattern in their adjustment (reaction) to labour market institutions using a Chow test at 5 per cent confidence level. This finding seems particularly robust for unemployment variables. Labour force participation rates, on the other hand, have to be explained by another set of variables. Moreover, they seem to be affected by the institutional setting in an opposite way than western industrialized countries. These results should of course be interpreted with caution. As noted, the scope of this analysis is restricted to the formal sector only. The institutional environment is also becoming more complex (non standard forms of employment have increased for example). Finally, indicators are far from perfect. For example, employment protection legislation indicators do not address exemptions to the application of EPL in the small enterprises and the enforcement procedures (existing indicators are based on the legal constraints that apply in each country and do not capture the degree of enforcement of the laws).

V. Conclusion

This paper analyzed the main labour market institutions of a set of nine transition countries and showed that these countries have adopted institutions broadly similar to those in the EU (in particular the CEE countries): it was also found that diversity again prevails within transition countries. The main "difference" (in relative levels) refers to labour taxation where transition countries rank among the highest.

Based on theoretical and empirical evidence for western industrialized countries (OECD), an econometric analysis was conducted to assess the potential effects of labour market institutions on labour market outcomes. Generally, no statistical impact of employment protection legislation was found on the various unemployment rates of transition countries. In contrast, EPL seems to

²² This result is also consistent with evidence based on bivariate analysis and showing a weak but positive association between EPL and employment to population ratio. However, the results there also reveal the opposite relationship for prime-age men. Therefore a more detailed analysis (by sex and by age) would be necessary to bring about clearer trends and results.

influence labour supply significantly in the sense that stricter employment protection tends to have a negative effect on employment and labour market participation rates. However, it was found out that in transition countries this effect is actually opposite than in the western OECD countries and that in the former group of countries more protection leads to higher levels of employment and labour market participation. The key labour market institutions on which policies of transition countries should be focused to improve their labour market situation are collective bargaining institutions and active labour market programmes. Moreover, according to this paper findings, payroll taxes are positively correlated with unemployment rates, in particular long-term and youth unemployment rates. This suggests that transition countries willing to cut currently high (long-term) unemployment rates may envisage to gradually reduce extensive payroll taxes.

Therefore policies promoting social dialogue, but extending it to pay higher attention to employment promotion and unemployment reduction and to ensure more labour market stability, rather than pure deregulation should clearly be on the political agenda of the transition countries. Reforming labour legislation should also be considered, in particular in some countries. However, this should be done while considering and combining the whole set of labour market institutions, to find a good balance between the need of flexibility (desired by employers) and of security (desired by workers). Finally, it should be noted that the previous analysis focused very much on aggregate labour market outcomes, such as unemployment and labour input. It would also be very important to develop further research on the adjustment of labour markets (labour market dynamics) to the macroeconomic and structural reforms that have taken place in these countries, as there have been many changes in this respect over the last decade.

Annex 1. - Methodological note on EPL indicators using OECD methodology

The OECD has produced several EPL indicators to study the relationship between employment protection legislation and labour market flexibility and outcomes. In the Eo 1999, these indicators have been updated and have been enlarged to consider regulation concerning collective dismissals. The methodology describes here corresponds to this recent version of the EPL indicators. The summary indicator presented in this paper (table 2, last column) is constructed as a weighted average of 22 different measures describing various aspects of the legislation, covering both permanent and temporary contracts, as well as collective dismissals. Some of these measures are available as such based on normative information (e.g. notice period, maximum duration of temporary contracts, etc.), but some others need to be transformed into quantitative terms, using a subjective conversion scale. Table AI presents the 22 indicators aggregated in three steps, from one level to the next using a set of weight.

The first level refers to updated information (1999-2000), which was collected by national experts²³. Several sub-indicators are then obtained referring to major components of the legislation such as procedural inconveniences, notice and severance pay for no-fault individual dismissals, or the difficulty of dismissals (level 2). Level 3 provides three groups of indicators: (1) one describing legislation for regular contracts; (2) one covering temporary contracts and (3) capturing the collective dismissals procedures. In a final step, these three sub-indicators may also be aggregated in an “overall summary indicator” using different weights (see table A1). The countries with very flexible employment regulation have a low overall EPL indicator (close to 0 or 1), while those with very strict legislation will have a high indicator (close to 5 or 6).

²³ Details for Bulgaria, Estonia, the Czech Republic, Poland and the Russian Federation in Cazes & Nesporova (2002)

Table A1: Employment Protection Index: Selection of Indicators and Weighting Scheme

Level 1	Level 2	Level 3	Level 4
Procedures (1/2)	Procedural Inconveniences (1/3)	Regular contracts (5/12)	EPL Overall Summary Indicator
Delay to start a notice (1/2)	Notice and severance pay for no-fault individual dismissals (1/3)		
Notice period after 9 months (1/7)			
4 years (1/7)			
20 years (1/7)			
Severance pay after 9 months (4/21)	Difficulty of dismissal (1/3)		
4 years (4/21)			
20 years (4/21)			
Definition of unfair dismissal (1/4)	Fixed-term contracts (1/2)	Temporary contracts (5/12)	
trial period (1/4)			
compensation (1/4)			
reinstatement (1/4)	Temporary Work Agency (1/2)		
valid cases other than objective (1/2)			
max number of successive contracts (1/4)	Collective Dismissals (2/12)		
max cumulated duration (1/4)			
types of work for which is legal (1/2)			
Restrictions on number of renewal (1/4)	definition of collective dismissal (1/4)		
max cumulated duration (1/4)			
additional notification (1/4)			
requirements (1/4)			
additional delays involved (1/4)	other special costs to employers (1/4)		
other special costs to employers (1/4)			

Annex 2. - Definitions and Data Sources

Data have been gathered for twenty-seven countries. Two groups of countries are considered: nineteen OECD countries and eight transition countries. The two groups include:

For the OECD sample: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden and United Kingdom, United States. For the transition sample: Bulgaria, Czech Republic, Estonia, Hungary, Poland, Russian Federation, Slovakia and Slovenia.

Dependant variables

For the OECD countries, unemployment rates, labour force participation rates and employment rates are obtained from the OECD, Employment Outlook 2001. For the transition countries: unemployment rates, labour force participation rates and employment rates are obtained from national LFS and from OECD, Employment Outlook, 1999. Youth unemployment rates are from EUROSTAT, 2001. Data are available for all countries except Russia.

Independent variables (labour market institutions)

Union and wage bargaining process

- (a) The union density variable is measured as the percentage of all salaried workers who belong to a union.
- (b) Collective bargaining coverage index takes a value of 1 when collective agreements cover less than 25% of all salaried workers, 2 if this number is between 26 and 69 per cent and 3 when coverage is above 70 per cent.
- (c) The degree of union and employer coordination is measured through an index that ranks from 1 (low) to 3 (high). The overall coordination is obtained as the average of union and employer coordination.

Union density, Collective bargaining coverage index, coordination of collective bargaining are obtained from author's calculations, ILO, 1997 and Riboud et al. 2001.

Unemployment benefit schemes

- (a) Unemployment benefit replacement rate is measured by the average benefits as a percentage of average wage. An alternative measure where the average benefits are replaced by the initial benefits has also been tested in the equations. Data on replacement rates are obtained from author's calculations.
- (b) Unemployment benefit duration corresponds to the maximum duration of unemployment benefits in months. For the purpose of estimations, the variable is converted into years with no limit substituted by a value of 6 years. Data on unemployment benefit duration are obtained from Riboud et al. 2001 and from O'Leary, Nesporova, Samorodov 2001.

Employment protection legislation

The Employment Protection Legislation Index measures the degree of strictness of the legislation and is calculated as a weighted average of indicators for regular contracts, temporary contracts and collective dismissals (see annex 1). A restricted version which considers exclusively legislation on permanent and temporary employment has also been tested in the equations. Data are from author's calculations and from Riboud et al. 2001.

Active labour market policies

The variable measures the ratio of GDP spending on ALMP to unemployment rate, both in percentage terms. For use in the equations, the variable is instrumented. Because the ALMP variable refers to percent of GDP normalized on current unemployment, it is highly endogenous. So the current percent of GDP spent on active labour market measures is renormalized on the average unemployment rate in 1993-1994 to create the instrument. Insofar as measurements errors in unemployment are serially uncorrelated, this will help with the endogeneity problem. Data are obtained from the OECD Employment Outlook, 1999 and from O'Leary, Nesporova, Samorodov 2001.

Tax burden on labour

Tax burden on labour is measured by the payroll tax rate variable. Data are from ISSA and Riboud et al. 2001.

Output gap

The output gap is measured as the fraction of real GDP to potential, GDP minus 1. It covers the same period as the dependant variables. Data for GDP at 1995 constant prices in dollars are obtained from the WDI at the World Bank. Potential GDP is obtained from an Hodrick-Prescott filter applied to real GDP with the value of the parameter lambda set to 25.

Annex 3. - Test methodology

To test whether OECD and transition countries have similar behaviours, the Chow test statistic is used. This statistic allows comparing coefficients of regressions calculated on two groups of data. In order to compute the test statistic, a single pooled equation is first estimated on all countries (OECD plus transition countries). Then the same model is estimated on the OECD countries and transition countries separately.

Let's suppose the pooled equation is:

$$y = a + b x_1 + c x_2 + u \text{ for both groups}$$

and that we get the two following equations when we estimate that model on each group :

$$y = a_1 + b_1 x_1 + c_1 x_2 + u \text{ for OECD countries}$$

$$y = a_2 + b_2 x_1 + c_2 x_2 + u \text{ for transition countries}$$

In the pooled equation, we are asserting that $a_1=a_2$, $b_1=b_2$ and $c_1=c_2$. The formula for the Chow test of this constraint is:

$$\frac{\frac{SST - (SS1 + SS2)}{K}}{\frac{SS1 + SS2}{N1 + N2 - 2 * K}}$$

where SS1 and SS2 are the error sums of squares from the separate regressions, SST is the error sum of squares from the pooled regression, K is the number of estimated parameters (K=3 in our case) and N1 and N2 are the number of observations in the two groups.

The resulting test statistic is distributed as a Fisher with K, N1+N2-2*K degrees of freedom.

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