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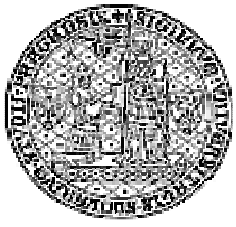

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Labour Market Institutions and Their Contribution to Labour Market Performance in the New EU Member Countries

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Abstract:
This paper focuses on the role of labour market institutions in explaining different labour market developments in European countries, with a special attention to the new European Union member countries. Labour market in these two parts of the EU witnessed diverging developments in the late 1990's. While labour markets indicators generally improved in the "old" EU15, they were exposed to severe shocks in Central Europe. At the same time, Central European labour markets' institutional background was changing and converging to the EU "standards". This may allow us to analyse effects of various institutional setups and of their changes on major labour market indicators. We aim at complementing several studies from the late 1990's by using more recent data that allow us to compare institutional setups from the mid 1990's and early 2000's both in "old" and "new" EU member states. We estimate effects of labour market institutions on various performance indicators (unemployment, long-term unemployment, employment, activity rate). While institutional arrangements played relatively minor role in both unemployment measures, they were much more powerful in explaining labour supply decisions. Our results confirm that high taxes and stricter employment protection increase unemployment and depress activity rate. We also show that active labour market policies seem to reduce unemployment and increase activity rate. Statistical tests further do not indicate that there is a difference in the institutional effects between "old" and "new" EU members.

Keywords: labour market, unemployment, European Union, labour market institutions

JEL: J730, J48, J51

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Introduction

Labour markets remain at the centre of both academic research and policy discussion in most advanced economies. Labour markets represent the most diverse, but arguably the most important segment of complex market structures that characterize modern economies. Indeed, different performance of labour markets in continental Europe and in the Anglo-Saxon countries was credited with widening the gap between the two groups of countries in the 1990's and early 2000's.

However, diversity of labour markets makes them extremely difficult to analyze. Labour markets are subject to macroeconomic shocks, microeconomic structures and various regional or national "customs" that are often difficult to describe, or even quantify. Until the seminal OECD study (OECD, 1994), most analyses concentrated on macroeconomic approach to labour market analysis. The OECD report argued that labour market institutions that specify contract flexibility, trade unions power, passive and active labour market policies, etc… are much more important and their proper setup might explain differences among major developed countries. While intellectually appealing, the "institutional approach" to labour market analysis is not without problems. Effect of many institutional arrangements is unclear both theoretically and empirically. Moreover, institutions are not homogenous across countries, i.e. the same institutional design may have very different effects in different countries.

This paper focuses on the role of labour market institutions in explaining different labour market developments in European countries, with a special attention to the new European Union member countries.[1] Differences in labour market developments in former and new EU member states increased since the late 1990s, old region improved its labour market performance while new region rather declined. New EU members' labour markets have been exposed to severe shocks and institutional reforms. This allows us to disentangle effects of various institutional setups and their changes on major labour market indicators. We follow several studies from the late 1990's (Nickell, 1997; Riboud et al., 2001; Cazes and

[1] Twelve countries, ten of them former planned economies, have joined the EU since 2004: Bulgaria, the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia. In this paper, however, we rely mostly on the OECD data that include only the Czech Republic, Hungary, Poland and Slovakia. The rest of the EU ("old members") consists of 15 countries that had been the EU members before 2004. The OECD dataset excludes Luxembourg and adds Norway.

Nesporova, 2004), but more recent data allow us to include dynamic changes in institutional setups from the mid 1990's to early 2000's both in "old" and "new" EU member states.
This paper is organised as follows. In the first chapter, we overview main theoretical arguments about the labour market institutions' role. In the following chapter, we briefly sketch labour market performance in European countries and compare "old" and "new" EU members' performance. The third chapter discusses major institutional indicators and their developments in the recent years. We argue that the European institutional setups are converging, for better or worse.
The fourth chapter then presents an econometrical analysis of the labour market institutions' effects. We run four separate regressions, estimating effects of labour market institutions on various performance indicators (unemployment, long-term unemployment, employment, activity rate). While institutional arrangements played relatively minor role in both unemployment measures, they were much more powerful in explaining labour supply decisions. Our results confirm that high taxes and stricter employment protection increase unemployment and depress activity rate. We also show that active labour market policies seem to reduce unemployment and increase activity rate. Statistical tests further do not indicate significnt difference between "old" and "new" EU members as far as institutional effects are concerned. However, given the limited amount of available data, this result should be taken carefully and exposed to further research. The final chapter discusses potential conclusions from our research and their limits.

1. Labour market institutions and their effects

Diversity of labour market institutions is often perplexing. While some are intuitively clear (minimum wages, wage flexibility, unemployment benefits), others are difficult to define (social dialogue, health and safety rules, work councils, etc.). Countries differ extensively in their use of labour market institutions: Germany and Sweden are examples of tightly regulated labour markets where institutions' predominant concern is protection of existing jobs. Anglo-Saxon countries are more often associated with labour institutions that rely on markets and favour job creation (and destruction) rather than protection. The evident unemployment gap between the (continental) Europe and US led many observers to argue that the more flexible US institutions were at the root of the superior performance. [2]
Unfortunately, economic theory does not provide clear answers as what these effects may be. If we assume that bargaining on labour markets is efficient, firms maximize their profits and market institutions do not affect aggregate efficiency. They may affect, however, distribution of profits. Most labour market institutions aim at increasing the labour share of the total profit. For example, minimum wages, employment protection laws, collective bargaining increase payouts to workers after the implementation. While the total product remain unchanged (firm is efficient), the labour share was increased.
More realistically perhaps, other models assume that institutions may change the total productivity. Trade unions increase insiders' wages, firms reduce employment and labour reallocates to shadow (or non-unionized) sectors with lower productivity – total productivity then falls and distribution effects are unclear, as some workers gain, some lose. The same holds for minimum wage or employment protection laws. Profit-sharing, on the other hand, increases not only productivity of existing workers but encourages higher employment as well (firm has lower fixed costs of hiring workers).

[2] See Freeman (2007) for a detailed discussion of labour market indicators.

Moreover, some institutions may improve market outcomes if they move market closer to the "ideal". Increasing trust between workers and managers/owners may increase workers' willingness to accept wage cuts during economic hardship (Freeman and Lazear, 1995). Mancur Olson (1990) argued that even centralized wage bargaining in a small open economy may improve total outcome, as central trade unions would internalize the negative externalities from industry level bargaining. Indeed, Teulings and Hartog (1998) showed that wages in countries with centralized bargaining reflected economic conditions much better than wages in the (decentralized) US labour market.

Therefore, one may choose to argue that labour market institutions do not change, decrease or increase efficiency of the labour markets. Nevertheless, since the mid 1990's the discussion of labour market institutions was dominated by the strong claim by Nickell (quoted in Nickell, Nunziata, and Ochel, 2005) who argued that labour market institutions and their changes may explain changes in the OECD countries unemployment. This claim was later undermined by studies by Blanchflower (2001) or Baker, Howell and Schmitt (2005) who argued that these results are sensitive to model specification - adding additional years, countries or indicators eliminated significance of Nickell's estimators.

To complicate analysis even further, one has to keep in mind that institutions evolve over time and their effects may change as well. For example, Calmfors and Drifill (1988) showed that unemployment was highest in countries with industry-based collective bargaining – the famous inverse U hypothesis. However, this relationship all but disappeared in the 1990's, as acknowledged by the OECD Employment Outlook in 2004. Therefore, medium level of bargaining might have been particularly inefficient in the 1980's but as labour market participants in countries with this bargaining system suffered from higher unemployment, the nature of bargaining might have changed. Lindbeck (1996) makes a similar point, arguing that welfare system may have important dynamic effects that may become apparent only after habits and social norms adapt.

2. Labour market developments in the NMS and European context

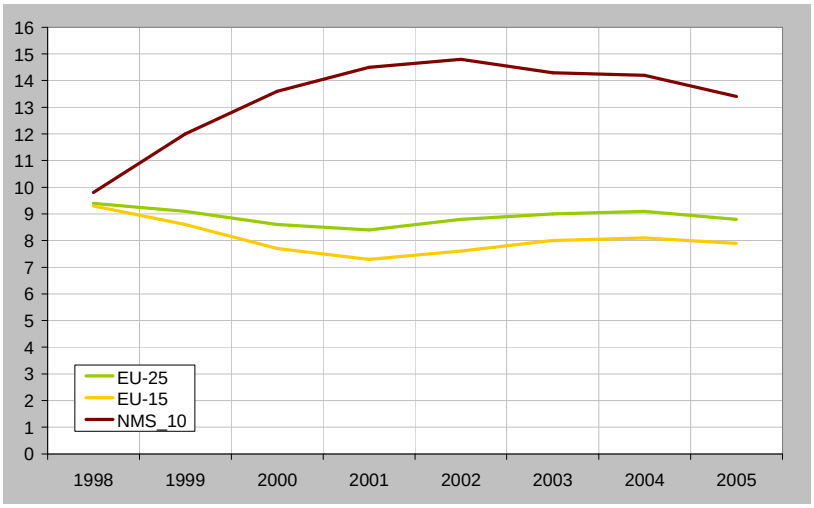
Labour markets in the new EU member states were under close scrutiny throughout the 1990's. Many authors (Nesporova, 2002) or Lechner ansd Wunsch (2006) are rather critical of the labour market performance. Most authors, however, concentrate on macroeconomic policies, blaming large negative shocks for increasing unemployment in these countries. Nesporova (2002), for example, devotes only several paragraphs of her paper to the discussion of institutional factors and is rather sceptical vis-à-vis their effects on labour market developments. Later research by Cazes (2002) and Cazes and Nesporova (2004) indicates that at least some labour market institutions matter – trade union power seems to increase unemployment while bargaining coordination may reduce it. Active labour policy then has a small positive effect on employment.

As figure 1 below illustrates, EU 10[3] countries witnessed a substantial increase in unemployment rate between 1998 and 2002 when the average unemployment in the EU-10 peaked at almost 15 %. It fell since then, but only slowly. The EU-15 unemployment rate is much more stable: it hovered around 9 % in the 1998-2005 period.[4] During that period, however, several EU countries cut their unemployment rates significantly (Spain, Ireland, Finland), while it increased in others (Germany, Portugal).

[3] Ten countries that joined the EU in 2004 are referred to as EU10 in this paper. They are Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

[4] Long-term unemployment exhibited the same trends in this period, differences between these two groups of countries were even more pronounced.

Figure 1: Unemployment rates in the European Union (%)

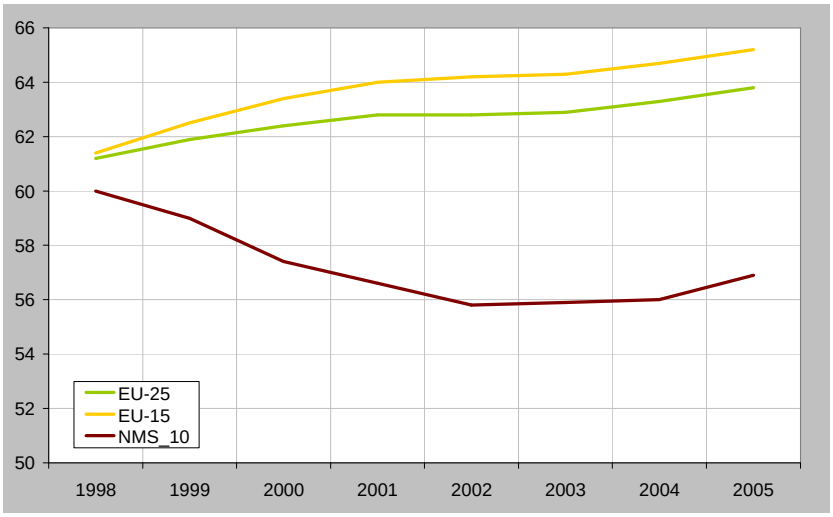


Source: Eurostat

Labour markets recovered in 2005 and 2006, as the EU economy gathered speed – in some new member states (and also in Ireland and Spain) the labour force expanded by 2-4%. Following some deregulation measures, particularly in Spain, two thirds of new jobs were generated in part-time jobs. The lowest unemployment was recorded in Denmark, Ireland and the Netherlands (around 4 %), the highest being in Poland and Slovakia (16 and 14 % respectively).

Employment rates, perhaps a more appropriate measure of the labour market efficiency, increased by 1.4% in the EU25 between 2000 and 2005, but the "old" members witnessed moderate growth (1.8%) while "new" members rather a decline (see figure 2). The employment jumped by 7 percentage points in Spain, by almost 6 percentage points in Lithuania. At the same period, employment fell by more than 2 percentage points in Poland (where employment rate is only 53 %) and by 1 point in Portugal.

Figure 2: Employment rates in the European Union (%)



Source: Eurostat

The Lisbon Agenda of the EU, an ambitious programme aimed at increasing the EU's competitiveness, stressed the importance of labour market performance and urged the EU countries to reform their labour markets. The EU policy seems to be captured by the

"flexicurity" buzzword that is supposed to combine flexibility and security. The prime example of flexicurity is Denmark and its "Danish Golden Triangle" where flexible labour market and generous social security system are supported by active labour market policies.
Indeed, the OECD ranked Denmark as the most intense reformer of labour markets, followed by the Netherlands and Finland. Out of the EU25 that are the OECD members as well, the slowest reformers are squarely among the "new" member countries: the Czech Republic, Hungary and Poland. The new member states score particularly poorly in working-time flexibility – see the European Commission (p. 56, 2005).
On the other hand, as we argue in the following chapter, the new EU member states have more liberal employment protection and lower minimum wages. Both trade union density and collective bargaining coverage are significantly lower in the new member states as well as degree of bargaining centralization and coordination. The "new" members spend relatively less on both active and passive labour market policies and unemployment benefits entitlement duration is much shorter.
It may be thus argued that there are several groups of countries within the EU. There are reformers among "old" members, led by Denmark, Ireland and other small countries. They typically have low unemployment rates, high activity rates, but also high social security expenditures, high taxes and large part of work force in "augmented" jobs either created or subsidized by governments. Large "old" members – Germany, Italy, and France – are inconsistent in their reform efforts and suffer from high unemployment and high social expenditures.[5]
Among the new member states, the three Baltic states are the most keen reformers, even though their activity and employment rates are still low. At the same time, the central Europe trio of Hungary, the Czech Republic and Poland is not adapting their labour markets to changing environment. The Czech Republic benefits, so far, from relatively high activity rates, but Poland and Hungary are suffering from low activity.
The analysis above indicates that there is surprising diversity in labour market institutions even within the European Union. Given the fact that we have to rely on the OECD data and that neither Estonia, Latvia nor Lithuania are the OECD members, the results of our analysis must be interpreted carefully. As explained in detail below, we use 18 countries data set that consists of only four "new" member countries (Czech Republic, Hungary, Slovakia, and Poland; hereafter "NMS"), thirteen "old" members (Belgium, Denmark, Germany, Spain, France, Ireland, Italy, Netherlands, Austria, Portugal, Finland, Sweden, United Kingdom; Luxembourg and also Greece in some cases are missing) and a non-EU Norway. However, no better data set covering labour market institutions is available.

3. Labour market performance and the role of institutions

The institutional barriers to the functioning of the labour market and its rigidity are not easily quantifiable as discussed above. Recent theoretical and empirical studies usually use a set of institutional indicators, as there is not any single measure of institutional set up. These "institutional environments" are compared to labour market performance to assess the real labour market flexibility/rigidity – see for instance Nickell (1997), Riboud et al. (2001), Blanchard and Wolfers (2000), Cazes and Nesporova (2004), ILO (2001). We adopt the same approach as the latter and we focus on five institutional areas: employment protection legislation, wage setting institutions (trade unions and minimum wages), system of labour taxation and labour market policies expenditure.

[5] Germany would score better if data from 2006 were available, as it reformed its labour market rather dramatically.

This list is not exhaustive as there are many factors influencing the labour market flexibility. Blanchard and Wolfers (2000) emphasise the importance of adverse economic shocks and their interaction with labour market institutions for explaining the unemployment dynamics and differences among the countries.[6] Riboud et al. (2001) underline the influence of macroeconomic and structural reforms on labour market performance of CEE countries in 1990s. Freeman (2007) argues that even institutions' effects on labour markets may change over time, so the same institutions may have different effects in different countries or in different periods. The institutions adapt to the country's general traditions and habits and those institutions undermining countries' goals (low unemployment, lower inequality…) are eventually abandoned or ignored, so we do not observe a random set of institutions across countries.

The effect of institutions is thus hard to uncover but still can not be considered insignificant (rigid institutions resulting mainly in low employment creation, rising proportion of long-term unemployed, composition of the labour force and employment etc.). Therefore, we endeavour to classify main labour market institutions and, eventually, to assess their effects on the labour market.

Employment protection legislation (EPL)

The official aim of this labour market provision is to improve workers' employment conditions and enhance their welfare. The regulation might be provided both through labour legislation and collective agreements and refers to legal framework governing conditions of hiring and firing. It mainly restricts the employers' freedom to dismiss workers and thus reduces the flows into, but also out of, unemployment.

The same as with other labour market provisions, there are to be found both positive and negative consequences of a stricter employment regulation. Employment protection, beside its effect on workers welfare resulting from higher job security, stabilizes the employer-employee relationship and might stimulate the firm's investment in human capital of workers, leading to a higher productivity. On the macroeconomic level, it might be also considered a stabilizer smoothening labour market adjustment to adverse shocks. On the other hand, there might also exist significant negative side effects in raising costs of firms while adjusting the stock of employment and worsen their flexibility in changing economic conditions. Moreover, it widens the distance between the labour market "insiders" and "outsiders" (see for instance Layard et al., 1991) and in this sense might contribute to labour market rigidity and higher unemployment, especially the long-term unemployment[7]. The overall net effect of EPL is thus ambiguous and concerns employment, unemployment, labour costs and productivity.

Empirical literature gives rather mixed evidence of employment protection consequences for labour market performance. OECD (1999) indicates negative correlation between EPL strictness and employment and participation rate in the member countries, but a positive influence on employment of prime age males may exist too. Generally there is no clear effect of stricter EPL on overall unemployment, but the EPL may increase its duration and change its composition. Cazes and Nesporova (2003) found a significant influence of stricter EPL on lower labour turnover in CEE and OECD countries over the 1990s; EPL also increased the average job tenure. In their later work (Cazes and Nesporova, 2004) authors prove a significant relationship between the level of employment protection and employment and

[6] While adverse economic shocks explain well the general development of unemployment over time, labour market institutions are a significant factor for explaining the cross-country variation. Interaction of these two factors then has the power to explain the development of differences in labour market performance of countries over time.

[7] On the other hand, short-term unemployment might be decreased by reducing the inflows to unemployment.

participation rates. However, according to the authors, the direction of influence differs for transition and OECD countries. Stricter protection tends to decrease employment and labour market participation in the OECD group, but tends to improve employment performance in the transition countries.

For measuring the strictness of employment protection we follow the methodology of the OECD (1999, 2004), which developed a system of EPL indicators, including a single overall composite indicator, for measuring the strictness of the EPL in its different fields of influence. As many as twenty two measures describing various aspects of EPL, covering regular and temporary contracts and collective dismissals, were aggregated into a summary indicator using a set of weights. EPL index 1 covers conditions of regular and temporary contracts, EPL index 2 covers in addition also terms of collective dismissals. Indices reach the values from 1 to 6, low index indicates flexible legislation and liberal hiring and firing environment, while stricter protection is reflected in a higher value of the index.

Overall situation in European countries is shown in table 1. As can be seen, NMS do not constitute a homogeneous group in terms of EPL strictness, especially in 1998. Slovakia had the toughest legislation of the four countries, but there was a significant decrease and it fell under the average of the NMS until 2003. Slight increase in EPL strictness is evident in case of Hungary and Poland, but still Hungary, together with Slovakia, remains more liberal, Czech Republic and Poland being less liberal in terms of EPL strictness. Differences among countries tend to decrease in time.

Table 1. Employment protection legislation in the selected European countries and the USA

	EPL1		EPL2	
	1998	**2003**	**1998**	**2003**
Belgium	2.15	2.18	2.48	2.50
Czech Republic	**1.90**	**1.90**	**1.94**	**1.94**
Denmark	1.42	1.42	1.83	1.83
Germany	2.46	2.21	2.64	2.47
Greece	3.54	2.83	3.49	2.90
Spain	2.93	3.05	2.96	3.07
France	2.98	3.05	2.84	2.89
Ireland	0.93	1.11	1.17	1.32
Italy	2.70	1.95	3.06	2.44
Hungary	**1.27**	**1.52**	**1.54**	**1.75**
Netherlands	2.12	2.12	2.27	2.27
Austria	2.21	1.94	2.38	2.15
Poland	**1.49**	**1.74**	**1.93**	**2.14**
Portugal	3.67	3.46	3.66	3.49
Slovakia	**2.38**	**1.42**	**2.53**	**1.60**
Finland	2.09	2.02	2.18	2.12
Sweden	2.24	2.24	2.62	2.62
United Kingdom	0.60	0.75	0.98	1.10
Norway	2.69	2.56	2.72	2.62
United States	0.21	0.21	0.65	0.65
NMS average	**1.76**	**1.65**	**1.98**	**1.86**
EU + Norway average	**2.32**	**2.19**	**2.49**	**2.39**
NMS coefficient of variation	**0.28**	**0.13**	**0.21**	**0.12**
EU + Norway coefficient of variation	**0.37**	**0.34**	**0.30**	**0.26**

Source: OECD (1999, 2004)

The EPL strictness varied more among the "old" members, however, it has converged somewhat as well in 2003.[8] Southern European countries have the toughest regulation while the rules are more relaxed as one moves north. English speaking countries exhibit the most liberal EPL, the situation here is being close to the United States with its most liberal legislation compare to Europe.
Generally EPL in NMS is not as strict as in the other group – the average EPL index (both version 1 and 2) was significantly lower in both periods. Also the decrease in cross-country differences in time was larger among the NMS (coefficient of variation fell by roughly 50 % in NMS, while there was only a slight decrease in the rest of the European countries).

Minimum wage setting

A government policy aimed at increasing low incomes from employment is nowadays a common practice in almost all the developed countries in the world (Gregg, 2000). The policy can take various forms; minimum wage is one of them. Minimum wage might be either statutory, established by the government, or as an extension of collective bargaining agreements.[9]
Introduction of minimum wage might pursue different goals. Advocates of minimum wage argue mainly by decreasing poverty, reducing income disparities, protection and motivation of low productive workers and making work pay. However, minimum wage would not be an effective tool to promote them as it might increase only incomes of those individuals who work. Moreover, introducing and increasing minimum wage might represent a large burden for employers, who might decide to fire workers, whose productivity would not reach the minimum wage. To the extent in which these negative consequences would occur, potential benefits for working poor would be limited.
Minimum wage is a highly controversial instrument of labour market policies. Economic theorists have not reached a broad consensus regarding its consequences so far. But it is usually generally accepted that although it might have some positive impacts on motivation to productivity increase among low-paid workers (Stigler, 1946, Acemoglu a Pischke, 1998, Cahuc a Michell, 1996), as a motivation device in efficient wages framework (see Rebitzer and Taylor, 1995, or Manning, 1995), or in case of a monopsony (Ehrenberg a Smith, 1994), there exists a threshold, over which the negative effects of minimum wage prevail. Minimum wage then increases the unemployment and causes economic losses in terms of economic efficiency. The effect is stronger for particular groups of workers with the lowest productivity, especially the young and least experienced. This situation is to certain extent confirmed by existing empirical research. For a summary of empirical research results on this issue see e.g. Brown, Gilroy and Kohen (1982) or OECD (1998).
Situation in the NMS and other European countries is shown in table 2. All the four NMS have introduced legally binding minimum wage. The highest real minimum wage value (measured in purchasing power standard – PPS value of the wage) can be found in the Czech Republic; on the other hand, Slovakia has the lowest level. Still, the differences among countries are not so marked. There is a clear trend in increasing the minimum wage tariffs.

[8] Employment protection has been relaxed in OECD countries since 1990s according to recommendations of the OECD Jobs Strategy (1994), but the changes applied mainly to regulation of temporary contracts, leaving the regular employment protection unchanged (Brandt et al., 2005). Significant decrease is evident for instance in case of Italy and Greece.

[9] Many „old" European countries don't have legally binding minimum wage, but usually there exist an effective minimum wage determined by collective bargaining (Austria, Italy, Germany, Denmark, Sweden).

Nevertheless, the minimum wage levels are still significantly lower than in the "old" member states (roughly 40 % of their level in 2004).[10]

Table 2. Minimum wage in the selected European countries and the USA

	Hourly real minimum wage, USD (PPS)		Minimum wage/ median wage	
	2000	**2004**	**1999**	**2003**
Belgium	6.54	6.54	0.49	0.47
Czech Republic	**1.63**	**2.55**	**0.26**	**0.37**
Denmark				
Germany				
Greece	3.39	3.58	0.51	0.49
Spain	3.13	3.08	0.31	0.29
France	6.37	6.92	0.60	0.61
Ireland	5.43	5.81	0.42	0.38
Italy				
Hungary	**1.27**	**2.06**	**0.36**	**0.49**
Netherlands	6.62	6.83	0.51	0.51
Austria				
Poland	**1.87**	**2.04**	**0.36**	**0.40**
Portugal	2.69	2.71	0.44	0.44
Slovakia	**1.27**	**1.47**	**0.47**	**0.45**
Finland				
Sweden				
United Kingdom	5.50	6.34	0.42	0.44
Norway				
United States	5.15	4.69	0.37	0.32
NMS average	**1.51**	**2.03**	**0.36**	**0.43**
EU + Norway average	**4.96**	**5.23**	**0.46**	**0.45**

Source: OECD

As for the real economic burden represented by the minimum wage, it might be measured by a relative share of minimum wage on median wage in the economy. Here the situation is different. Although relatively low, minimum wage is a higher proportion of median wage in the NMS, thanks to a relatively lower overall wage level. The share was roughly 40 – 50 % in 2003 and there was an evident increase between the examined years, with the exception of Slovakia. By raising its level, the differences between the NMS group and the other group almost disappeared in 2003.

Collective bargaining and trade unions

The role of trade unions in collective bargaining process is also a factor influencing wage formation and determining labour costs and flexibility of firms. In most of the European countries, trade unions play an important role in wage bargaining. The trade unions' power was traditionally measured by the share of workers who were trade unions' members – trade union density. However, even if the density is rather low in some countries, it is a common practise to extend the agreements also to non-unionized workers, thus covering a large share of employees in the whole economy (e.g. France, Spain). Thus, the degree of collective bargaining coverage (share of all salary earners whose wage is actually determined by a collective agreement – legal extension of bargained wage rates to non-unionized workers) might be a more reliable indicator in terms of real economic consequences. The level of union

[10] Still, this value may not reflect the real influence of minimum wage system in particular countries, as there may exit also sub-minimum wage tariffs applying for the most impacted groups of workers (young, least skilled, part-time workers). These are quite common in Europe (Dolado et al., 1996).

coordination and centralization is also an important aspect. Coordination refers to ability to coordinate bargaining among various unions and employers' organizations. Centralization refers rather to the level of bargaining (firm, industry, country) and the role of the government; high degree of centralization does not necessarily have to mean close coordination.

Table 3. Collective bargaining in the selected European countries

	Trade union density	Collective bargaining coverage		Collective bargaining centralisation	Collective bargaining coordination
	2000	2000	2004	1995-2000	1995-2000
Belgium	56	90	90	3	4
Czech Republic	**27**	**25**	**27**	**1**	**1**
Denmark	74	80	77	3	3
Germany	25	68	70	3	4
Greece	27	…	65	…	…
Spain	15	80	80	3	3
France	10	90	90	2	2
Ireland	38	67	44	4	4
Italy	35	80	90	2	3
Hungary	**20**	**30**	**40**	**1**	**1**
Netherlands	23	80	80	3	4
Austria	37	95	98	3	4
Poland	**15**	**40**	**40**	**1**	**1**
Portugal	24	80	80	4	4
Slovakia	**36**	**50**	**40**	**2**	**2**
Finland	76	90	90	5	5
Sweden	79	90	90	3	3
United Kingdom	31	30	40	1	1
Norway	54	70	74	4.5	4.5
NMS average	**25**	**36**	**37**	**1.3**	**1.3**
EU + Norway average	**40**	**78**	**77**	**3.1**	**3.5**

Source: OECD

Centralisation:

1 = Company and plant level predominant.

2 = Combination of industry and company/plant level, with an important share of employees covered by company bargains.

3 = Industry-level predominant.

4 = Predominantly industrial bargaining, but also recurrent central-level agreements.

5 = Central-level agreements of overriding importance.

Co-ordination:

1 = Fragmented company/plant bargaining, little or no co-ordination by upper-level associations.

2 = Fragmented industry and company-level bargaining, with little or no pattern-setting.

3 = Industry-level bargaining with irregular pattern-setting and moderate co-ordination among major bargaining actors.

4 = a) informal co-ordination of industry and firm-level bargaining by (multiple) peak associations;
b) co-ordinated bargaining by peak confederations, including government-sponsored negotiations (tripartite agreements, social pacts), or government imposition of wage schedules;
c) regular pattern-setting coupled with high union concentration and/or bargaining co-ordination by large firms;
d) government wage arbitration.

5 = a) informal co-ordination of industry-level bargaining by an encompassing union confederation;
b) co-ordinated bargaining by peak confederations or government imposition of a wage schedule/freeze, with a peace obligation.

Theory suggests that the trade unions generally tend to raise wages and thus influence unemployment. The more workers they cover, the higher this impact. This effect might be in reality offset by the extent to which unions and/or firms coordinate their wage determination[11] (Nickell and Layard, 1999, OECD, 1997). Overall impact might be also lowered by greater

[11] According to Layard et al. (1991), average wages are more responsive to labour market conditions in those countries where wage bargaining is more coordinated. Higher coordination then means less rigidity in terms of lower wage pressure and reduce the negative unemployment consequences of trade union bargaining.

degree of product market competition (Boeri, 2005). The estimation of total effect of trade unions on unemployment and labour market performance is not robust in most empirical studies. For summary of empirical finding se for instance OECD (1997 and 2004).
Table 3 summarizes the key features of collective bargaining process in the selected European countries and the NMS. Clearly both trade union density and collective bargaining coverage are much lower in the NMS. There is also the lowest degree of bargaining centralization and coordination in the NMS with the exception of Slovakia. Both trade union density and collective bargaining coverage show higher trade union influence in "old" member countries, which might be on the other hand offset by higher degree of centralization and coordination.

System of labour taxation

Taxes on labour are expected to influence negatively labour markets, as taxes drive a wedge between the labour cost to the employer and take-home wage for the employee. The larger the wedge is, the more pronounced negative effect on labour market will be. In this respect, it is irrelevant whether we analyze income taxes or social security contributions, as highly redistributive nature of most social security programs separates their contributions from entitlements. Several studies confirmed this theoretical conclusion by empirical tests: Nickell (1997), while some are rather inconclusive (Scarpetta 1996). Daceri and Tabellini (2000) show that taxes are more significant in countries with strong trade unions

Table 4. Taxation in the selected European countries

	Taxes on labour paid by employer and employee, % GDP		Total tax wedge (%)	
	2000	**2004**	**2000**	**2004**
Belgium	22.3	21.9	57.1	55.4
Czech Republic	**17.4**	**18**	**42.7**	**43.5**
Denmark	21.8	20.1	44.3	41.3
Germany	21.8	20.1	53.9	53.3
Greece	12.6	12.9	38.4	38.3
Spain	13.9	14.1	38.6	38.7
France	21.7	22.2	49.6	49.8
Ireland	11.4	10.4	28.9	26.2
Italy	17.6	18.1	46.4	45.4
Hungary	**18.6**	**18.6**	**52.7**	**50.3**
Netherlands	18.2	15.9	39.7	38.6
Austria	21.5	21	47.3	47.5
Poland	**14.3**	**13.1**	**43.2**	**43.3**
Portugal	13.5	..	37.3	36.8
Slovakia	**16**	**..**	**41.8**	**42.5**
Finland	21	20.6	47.8	44.5
Sweden	27.8	26.9	50.1	48.4
United Kingdom	14.2	13.8	32.1	33.4
Norway	16.6	..	38.6	38.1
NMS average	**16.6**	**16.6**	**45.10**	**44.91**
NMS10 average	**16.3**	**15.4**	**..**	**..**
EU+Norway average	**18.4**	**18.3**	**43.34**	**42.38**
EU15	**18.9**	**18.4**	**..**	**..**

Source: OECD, Eurostat
Total tax wedge on labour: The combined central and sub-central government income tax plus employee and employer social security contribution taxes, as a percentage of labour costs defined as gross wage earnings plus employer social security contributions (average wage). The tax wedge includes cash transfers.

Labour taxes in the European Union are very high, highest in the world. Measured as percentage of GDP, taxes on labour reach 27 % in Sweden, 22 % in France and Belgium, more than 20 % of GDP in Denmark, Germany, Austria, Slovenia and Finland. Ireland, Greece and the two Mediterranean islands (Cyprus and Malta) emerge as the low-tax countries with the labour taxes' share just above 10 % of GDP.
Impact of labour taxes is, however, better measured by their microeconomic effects. This is approximated by the tax wedge. As tax systems are progressive in all EU countries[12] the tax wedge differs for different income groups. For average wage earners, it reaches more than 40 % in several countries, both from the NMS and "old" members groups: Poland, France, Sweden, and Belgium. Tax wedge tend to fall for lower incomes, but it remains relatively high for countries as Poland, Sweden or Spain even for workers earning less than average wage (see EC, 2005).
Several countries have cut their labour taxes during the 1990's significantly. In some countries, cuts were aimed specifically on low earners (Belgium, Sweden), in some others cuts were more widespread (Hungary, Ireland, the UK). Tax wedge was increased, however, in Austria, the Czech Republic, Poland and France. [13] In general, taxes on labour paid by both workers and employers are lower in the NMS, but the total tax wedge on labour is slightly higher here.

Labour market policies (LMP)

Labour market policies may have ambiguous impact on unemployment and labour market performance. Active LMP[14] aim at enhancing human capital of those persons participating in these programs and sustaining their employability. The provisions may in this sense improve the efficiency of job-matching process. Although negative effects do occur (substitution effects and deadweight losses – see for instance Martin, 2000), empirical studies often find overall positive effects of these provisions on unemployment (OECD, 1993).
Passive LMP[15] may on the other hand decrease the job-search intensity and motivation of unemployed to accept a job offer and lower the economic costs of unemployment, raise the employees' wage claims and thus might increase the overall unemployment. At the same time it might increase the effectiveness of matching process and thus improve the labour market performance. The generosity of unemployment insurance system is of particular importance here. It depends mainly on unemployment insurance benefits payment duration and their relative level compare to previous labour income, i.e. the replacement rate.[16] Duration of benefits entitlement significantly influences mainly the duration of unemployment. The more generous the unemployment insurance system, the higher the unemployment rate and especially its long-term component is (Layard et al., 1991).

[12] Even „flat-tax" Slovakia has, in fact, progressive tax system due to its relatively high non-taxed minimum.
[13] The European Commission graded the Ireland, Italy and the UK as the most reformist countries in its review of labour market reforms, while the Czech Republic and Poland labour market policies did not change significantly in the 1994-2004 period (EC., 2005).
[14] OECD distinguishes following categories: public employment service and administration, training, employment incentives, integration of the disabled, direct job creation, start-up incentives.
[15] OECD distinguishes following two main categories: out-of-work income maintenance and support in the field of unemployment insurance system and early retirement.
[16] Replacement rates may be measured either in initial stage o unemployment (net value of unemployment benefits in the initial phase of unemployment relative to average production wage) or in a long-term (average net value of unemployment benefits, social assistance, family and housing benefits relative to average production wage over 60 months of unemployment).

Negative consequences of generous unemployment insurance system and high passive LMP spending might be partly offset by suitable active LMP measures aimed at returning the unemployed back to work. Final effect of LMP is thus given by the relative scope of these programmes and their various particular features (generosity, eligibility conditions, duration etc.).

Main features of labour market policy systems in the selected European countries and the NMS are presented in table 5. There are very significant differences between the two groups of countries. NMS in average spend relatively small amount of resources on LMP – about 0.4 % GDP both on each, active and passive provisions – these are thus of similar relative importance here. This spending in average represents about 0.03 – 0.04 % GDP per 1 percentage point of unemployment in these countries and there was a slight decrease between 1999 and 2004. The "old" members on the other hand spend in average about 1 % GDP on active and 1.5 % GDP on passive labour market provisions. Active labour market policies expenditure as a share of GDP per 1 unemployment percentage point was five-times higher than in the NMS and even six-time higher for passive labour market policies spending.

Table 5. Labour market policies in the selected European countries

	Spending on active LMP (%GDP) / unemployment rate		Spending on passive LMP (%GDP) / unemployment rate		Unemployment insurance benefit duration (months)		Replacement rate (%) – initial phase of unemployment		Replacement rate (%) – long-term unemployment	
	1999	2004	1999	2004	2001	2004	2001	2004	2001	2004
Belgium	0.159	0.137	0.275	0.287	unlim.	unlim.	63	63	47	52
Czech Republic	**0.022**	**0.031**	**0.036**	**0.031**	**6**	**5**	**50**	**50**	**36**	**30**
Denmark	0.338	0.333	0.594	0.484	60	48	64	61	61	59
Germany	0.165	0.120	0.268	0.243	12	12	61	61	60	60
Greece	0.028[1]	0.016	0.040[1]	0.043	12	12	45	48	0	0
Spain	0.081	0.067	0.112	0.140	24	21	72	69	25	25
France	0.130	0.101	0.168	0.179	60	23	71	73	42	40
Ireland	0.270[1]	0.138	0.333[1]	0.200	15	15	29	30	50	51
Italy	0.103[1]	0.074	0.056[1]	0.095	6	6	52	54	0	0
Hungary	**0.057**	**0.051**	**0.080**	**0.062**	**12**	**9**	**47**	**43**	**25**	**25**
Netherlands	0.513	0.313	0.716	0.485	60	24	71	71	58	61
Austria	0.133	0.125	0.305	0.290	10	9	55	55	51	51
Poland	**0.033[1]**	**0.007**	**0.042[1, 2]**	**0.042[2]**	**18**	**12**	**47**	**52**	**32**	**30**
Portugal	0.173[1]	0.104	0.182[1]	0.196	30	24	78	78	24	25
Slovakia	**0.026[3]**	**0.023**	**0.022[3]**	**0.019**	**9**	**8**	**64**	**64**	**65**	**21**
Finland	0.120	0.111	0.227	0.235	25	23	61	60	51	49
Sweden	0.272	0.197	0.251	0.210	15	28	78	77	52	52
United Kingdom	0.058	0.111	0.108	0.062	6	6	45	45	45	45
Norway	0.253	0.180	0.147	0.195	36	36	66	66	44	41
NMS average	**0.034**	**0.028**	**0.045**	**0.039**	**11**	**9**	**52**	**52**	**40**	**27**
EU+Norway average	**0.186**	**0.142**	**0.252**	**0.223**	**33**	**27**	**61**	**61**	**41**	**41**

Source: OECD. Ministry of Economy and Labour of Poland ([2]); year 1998 ([1]); year 2001([3]).

Initial replacement rate: net value of unemployment benefits in the initial phase of unemployment relative to average production wage of a single person, without children.

Long term replacement rate: net value of unemployment benefits, social assistance, family and housing benefits relative to average production wage of a single person, without children; average over 60 months of unemployment.

Data also reveal differences among the countries in the duration of unemployment insurance benefits entitlement[17]. Duration of payments was 10 months in average in the NMS, which is roughly one third compare to the "old" member countries.[18] Among the NMS, the longest entitlement period may be observed in Poland, the shortest in the Czech Republic. On the other hand, variation in replacement rates is not so marked, especially in the initial stage of unemployment (roughly 50 % in the NMS and 60 % in "old" member countries). The long-term replacement rate significantly fell in the NMS in 2004, caused mainly by substantial decline in case of Slovakia. Consequently, the NMS average lies well bellow the "old" members' average.

4. Empirical estimation of institutional barriers to the labour markets flexibility

In this chapter, we presents estimates of the labour market institutions' effects on various labour markets' indicators. To this end, we use an econometric model inspired by recent empirical research and by economic theory set out in part 3 of this paper.

As there is only scarce data available, we constructed a panel of eighteen European countries[19] and used data from years 1999 and 2004[20]. Out of eighteen countries in the panel, thirteen are "old" member countries, one is Norway, which we classify as an old member country for purposes of this paper and four countries are NMS. The source of the data is mainly the OECD and partly also Eurostat.

We examine the impact of institutional factors on four indicators of labour market performance: unemployment rate (*UR*), long-term unemployment rate (*LtUR*), employment rate (*ER*) and activity rate (*AR*)[21] (Eurostat methodology). In line with the previous research, the dependent variables are represented in logs (see for instance Blanchflower and Oswald, 1994).

The regression coefficients are estimated using the standard random effects generalized least square estimation procedure; active labour market policies expenditure is instrumented[22]. The regression equation has following form:

$$lnX_{ti} = \alpha + \beta_1 EPL_{ti} + \beta_2 MW_{ti} + \beta_3 CBC_t + \beta_4 TAX_{ti} + \beta_5 ALMP_{ti} + \beta_6 UBDur_{ti} + \beta_7 UBRR_{ti} + \beta_8 GDP_{ti} + \beta_9 INFL_{ti} + \varepsilon_{ti} \quad (1),$$

where X takes the form of *UR*, *LtUR*, *ER*, and *AR* in consequent regressions.

The independent variables and their expected effects were described in the previous section. In our regression, we used the second version of the EPL index as it covers wider spectrum of protection policies. Minimum wage is a cluster variable constructed according to minimum wage level (USD, PPS) and its relative share on median wage in the economy. The trade unions' power is represented by collective bargaining coverage which is more representative measure. Tax system consequences are reflected by total tax wedge on labour. Finally, to

[17] These differences are also reflected in the above-mentioned variance in spending on passive LMP.

[18] In its effect on labour market performance this might be eventually offset by differences in social benefits system – after the unemployed lose the entitlement for the unemployment insurance benefits and are covered by other provisions of social security system.

[19] Belgium, Czech Republic, Denmark, Germany, Spain, France, Ireland, Italy, Hungary, Netherlands, Austria, Poland, Portugal, Slovakia, Finland, Sweden, United Kingdom, and Norway. Greece was omitted due to the lack of data.

[20] Or years close to these dates in case of missing data.

[21] Activity rate is specified as a share of economically active persons – both employed and unemployed – aged 15 – 64 on the whole population in this age.

[22] This variable is endogenous because it relates the expenditure to the actual rate of unemployment. For this reason we instrumented this variable by a new variable relating the expenditure to the average unemployment rate in 5-year period before the actual year.

reflect the influence of labour market policies, expenditure on active LMP, unemployment benefits entitlement duration and initial unemployment benefits replacement rate is included.
We use the actual rate of unemployment in our regressions, but labour markets' institutions affect rather the equilibrium unemployment. Thus, two additional variables were used in the model – actual real GDP growth and change in the annual rate of inflation. Both of these variables capture influence of economic cycle. Inflation may be also considered an indicator of macroeconomic policy stance, see (Nickell, 1997).
The model analyzes mainly the basic correlations between the labour market performance and institutions. Its deeper explanation power is rather limited due to the lack of data on more countries and other relevant variables that might affect the dependent variables.[23] Moreover, only four NMS are covered in the sample and therefore it was not possible to run a separate analysis for this group of countries. Only the differences in the role of institutions between the whole group of countries and the "old" member countries and its implications for the NMS were examined using the Chow test for the stability of estimated coefficients (see also Cazes and Nesporova, 2003).
Regression estimation results are summarized in table 6. Our findings are generally in correspondence with the previous research of Cazes and Nesporova (2003) and Nickell (1997).
First model examined role of institutions in **unemployment** differentials among European countries. Out of seven institutional variables, only two have significant effect on **unemployment** differences and dynamics among European countries – tax wedge on labour and active labour market policies. While higher tax burden significantly increases the unemployment rate, active labour market policies work in the opposite direction and may offset the negative effect of taxation. None of the remaining variables is significant for explaining the development of unemployment, not even variables reflecting the effect of business cycle (inflation, GDP growth).
The second model, where we use **long-term unemployment** as dependent variable gives similar results. Here the estimated regression coefficients for tax wedge on labour and active labour market policies are even more pronounced. This model explains almost 50% of the variation in the long-term unemployment among 18 European countries. Explanatory power of the model is higher in the case of between-groups variation, the variation within countries in time is less robust. This conclusion is in line with the results of Blanchard and Wolfers (2000) who stress the importance of diverse reactions of each state's institutions to adverse economic shocks.
In the third and fourth model, explaining **labour supply decisions**, institutional factors proved to be more powerful. Employment protection legislation, taxes on labour, active labour market policies, unemployment benefits initial replacement rate, GDP growth and to some extent also collective bargaining coverage are all significant in both models. On the other hand, minimum wage, collective bargaining coverage and duration of unemployment do not seem to have a significant effect on activity rates.
The third and fourth models explain about 65% of variation in the respective dependent variable; and the explanatory power is again higher for between-groups variation. Stricter employment protection legislation and higher tax wedge tend to decrease both employment and activity rate. Active labour market policies improve labour market performance by increasing both, employment and activity rate. Similarly, initial unemployment benefits replacement rate increases the labour participation.

[23] These are for example the role of product market reforms (Griffith et al., 2006 or Boeri, 2006) or importance of adverse economic shocks (Blanchard, Wolfers 2000).

Table 6. Regression estimation results

	Unemployment rate	Long-term unemployment rate	Employment rate	Activity rate
Constant	1.0037	-0.7610	4.3847	4.3752
	(0.6500)	(1.0987)	(0.1340)	(0.0945)
EPL index	0.0417	0.0897	-0.0765 **	-0.0625 ***
	(0.1599)	(0.3083)	(0.0326)	(0.0206)
Minimum wage	0.0351	0.1440	-0.0096	-0.0041
	(0.0673)	(0.1223)	(0.0137)	(0.0089)
Collective bargaining coverage	-0.0038	-0.0078	0.0014	0.0008
	(0.0048)	(0.0088)	(0.0009)	(0.0006)
Total tax wedge on labour	2.3790 *	4.6445 **	-0.5069 *	-0.4108 **
	(1.3096)	(2.2049)	(0.2699)	(0.1923)
Active labour market policies spending	-1.7119 **	-2.4837 *	0.4153 ***	0.1656 *
	(0.6853)	(1.3165)	(0.1556)	(0.1001)
Unemployment benefits duration	-0.0004	-0.0015	-0.0004	-0.0003
	(0.0030)	(0.0056)	(0.0006)	(0.0004)
Unemployment benefits initial replacement rate	0.0046	0.0013	0.0019	0.0030 **
	(0.0094)	(0.0165)	(0.0019)	(0.0013)
GDP growth	0.0377	0.0555	-0.0185 ***	-0.0118 ***
	(0.0302)	(0.0616)	(0.0056)	(0.0034)
Inflation (change p.p.)	0.0088	0.0193	-0.0007	0.0003
	(0.0153)	(0.0326)	(0.0033)	(0.0019)
N (countries, time):	36 (18, 2)	36 (18, 2)	36 (18, 2)	36 (18, 2)
R^2 overall:	0.4583	0.4921	0.6511	0.6661
R^2 within:	0.3753	0.2267	0.3330	0.4208
R^2 between:	0.4640	0.5155	0.6705	0.6811
Chow test: F statistics (d.f.)	2.092 (8, 18)	1.832 (8, 18)	1.288 (8, 18)	0.905 (8, 18)

*** significant 1 %, ** significant 5 %, * significant 10 %
Random effects generalized least squares estimation method, robust standard errors in parentheses.
Source: OECD, Eurostat, own calculations

GDP growth has a negative effect on employment and activity rate, which may indicate slow labour markets' reaction that results in counter-cyclical behaviour. Our result further indicate that the European labour markets do not benefit from economic growth, at least when measured by the employment and activity rate. Cazes (2002) found a similar pattern when examined unemployment rates in nineteen European countries. In his results, unemployment would fall, remain stable or increase with increasing GDP, depending on specifications of models. Cazes hypothesised that labour markets often operate below the maximum potential, thus they do not need to react uniformly on changes in aggregate demand. Clearly, labour markets react on economic growth in a complex fashion and further research would be needed to clarify the relationship.

Due to limited data, we could not run separate regressions for "old" and "new" EU member countries. Therefore, we tested hypothesis of stability of the regression coefficients between the whole sample of eighteen countries and the sub-sample of fourteen "old" members for any of the dependent variables. This was tested by Chow tests[24] for each of the dependent

[24] We used a modified version of the test hypotheses and statistics, because number of observations in the NMS group is smaller than the number of parameters, $n_{NMS} < k$, and thus we can not use the standard methods in this case. We test the hypothesis $H_0 : E(y \mid \boldsymbol{X}; \boldsymbol{\beta}_{OE}) = E(y \mid \boldsymbol{X}; \boldsymbol{\beta}_{NMS})$. This is done by calculating the statistic

variables. The tests have not rejected the hypothesis of stability of coefficients and thus we cannot prove different behaviour of the NMS group. This result is thus inconclusive and further research using more detailed data sample is needed. We may speculate that further European integration will lead to further convergence of European labour markets and thus that the NMS group will become even more like the "old" member countries, at least in labour market institutions' effects.

5. Conclusions

This paper discussed the role and impact of labour market institutions on the performance of labour markets. Our discussion in the first chapter indicated that the relationship would not be straightforward and statistically very robust. Institutions are difficult to define and measure and compare between countries and their effect may change over time. The paper, nevertheless, analyses labour market institutions in eighteen European countries and finds that they do have some effect on major labour market indicators. We found that the labour markets in "new" member states enjoy more liberal employment protection legislation and lower minimum wages (although this represents almost similar economic burden compared to overall wage level in particular countries). Also, trade unions seem to have less say in the NMS: both trade union density and collective bargaining coverage are significantly lower in the NMS as well as degree of bargaining centralization and coordination. Both workers and employers pay lower taxes on labour in the NMS, although total tax wedge on labour is slightly higher here. The NMS spend relatively less on both active and passive labour market policies and unemployment benefits entitlement duration is much shorter. However, the differences between the NMS and old Europe are slowly diminishing in time.

Our econometric analysis suggests that two institutional factors significantly influence unemployment and long term unemployment: total tax wedge on labour and active labour market policies. While higher tax burden significantly increases the unemployment rate, active labour market policies work in the opposite direction and may offset the negative effect of taxation. Our model proved to be more powerful in explaining employment and activity rate. Stricter employment protection legislation and higher tax wedge are likely to reduce both employment and activity rate. Active labour market policies tend to increase both rates; the same goes for collective bargaining coverage, although the effect is not very significant. Unemployment benefits initial replacement rate tend to increase activity rate. Minimum wage setting, collective bargaining on wages and unemployment benefits system has rather limited or not significant overall effect on labour markets situation. When analyzing the patterns of effect of institutional factors on labour market developments in the NMS and "old" member countries, we were not able to prove different behaviour of the NMS group.

Our research thus indicates that European countries should concentrate on lowering current high taxes on labour that discourage formal labour market contracts and lead to higher unemployment and lower activity rates. Similarly, restrictive "employment protection laws" should be relaxed as to make process of hiring and firing more market friendly. This would increase activity rate in most European countries. Last, active labour market policies seems to encourage higher employment rates as well.

$$F = \frac{\frac{SSR_T - SSR_{OE}}{n_{NMS}}}{\frac{SSR_{OE}}{n_{OE} - k}} \approx F\,(n_{NMS},\, n_{OE} - k).$$

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