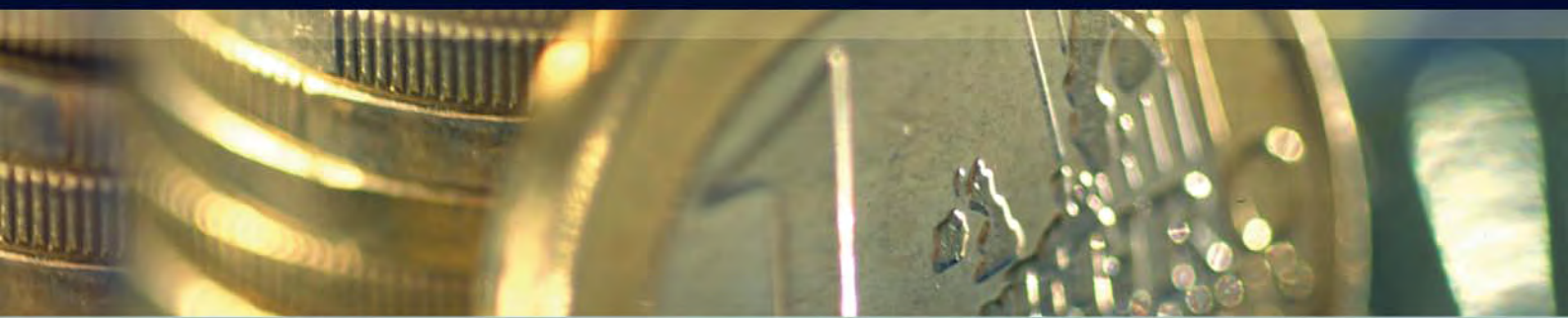


EUROPEAN ECONOMY

Economic Papers 391 | November 2009



Institutions and Performance in European Labour Markets: Taking a fresh look at evidence

Alfonso Arpaia and Gilles Mourre

Economic Papers are written by the Staff of the Directorate-General for Economic and Financial Affairs, or by experts working in association with them. The Papers are intended to increase awareness of the technical work being done by staff and to seek comments and suggestions for further analysis. The views expressed are the author's alone and do not necessarily correspond to those of the European Commission. Comments and enquiries should be addressed to:

European Commission
Directorate-General for Economic and Financial Affairs
Publications
B-1049 Brussels
Belgium
E-mail: Ecfin-Info@ec.europa.eu

This paper exists in English only and can be downloaded from the website
ec.europa.eu/economy_finance/publications

A great deal of additional information is available on the Internet. It can be accessed through the Europa server (ec.europa.eu)

ISBN 978-92-79-13366-4
DOI: 10.2765/30670

© European Communities, 2009

INSTITUTIONS AND PERFORMANCE IN EUROPEAN LABOUR MARKETS: TAKING A FRESH LOOK AT EVIDENCE

Alfonso Arpaia, European Commission, DG Economic and Financial Affairs (ECFIN) and IZA

Gilles Mourre European Commission, DG Economic and Financial Affairs (ECFIN) and Solvay
Brussels School of Economics and Management, Université Libre de Bruxelles (ULB)

Abstract

This paper presents a selective survey of the recent literature on labour market institutions and offers new empirical EU-based evidence on the impact of labour market reforms on employment and labour market adjustment. While the literature traditionally treats labour market institutions as exogenous, attention shifted recently towards understanding the underlying causes of specific institutional arrangements. As a consequence, the literature highlights the great importance of an efficient policy design exploiting these interactions wisely and identifies general principles for achieving an efficient policy design at both macro and micro levels. While empirical evidence does not show a major change in terms of intensity of labour market reform after the setting of the Economic and Monetary Union and the creation of the euro, the reforms aiming at strengthening the labour market attachment of vulnerable groups tend to have been successful both in raising their employment and increasing labour market adjustment

Keywords: labour market functioning; political economy; endogeneity; institutions; policy design

JEL classification: J20, J50, J64, K31.

1. INTRODUCTION

The variation of labour market responses to common shocks across industrialised countries in the late 1970 and early 1980s has been widely documented. While in some countries those shocks led to only a temporary deterioration in their unemployment prospects, others saw high and persistent unemployment even when the shocks faded away. This *differentiated* performance suggests the existence of country-specific structural factors, which may influence the responses to *common* shocks. Similarly, the sharp fall in unemployment observed in several euro area countries since the second half of the 1990s is considered by many observers to be structural, since it occurred with no signs of price and wage inflation (Decressin et al. 2001, Garibaldi and Mauro 2002). This differentiated improvement across Europe may be related to the specific pace at which labour market reforms were introduced in this period.

These differences in unemployment dynamics are captured by the coefficient of variation (Figure 2 in Annex). All countries saw the unemployment rate pick up in response to the common supply shocks recorded in the late 1970s and early 1980s, and this can be seen in the decline in the coefficient of variation. Some countries (such as Austria, Sweden, Norway, Japan or Switzerland) reacted much better than other countries (e.g. Ireland, Spain, Belgium, Italy, the Netherlands, the UK, France, Canada or the US), as they registered a much smaller increase in their unemployment rate in the mid-80s. In the subsequent period of the economic recovery in the late 1980s, some countries with above average unemployment (France and Italy) recorded a further increase in their unemployment rate, while a few countries with better starting positions saw some improvement in their labour market (Germany, Portugal, Sweden, Finland).¹ As a consequence of these differentiated reactions, the coefficient of variation went up. The employment crisis of the first half of the 1990s, which hit all countries except Denmark and, to a lesser extent, the United Kingdom, attenuated the differences in the unemployment rate pattern across countries. In the second half of the 1990s, the coefficient of variation continued to fall, suggesting that the improvement observed in the EU unemployment rate was particularly marked in countries with relatively high unemployment rates. However, despite the decline in the unemployment rate in many member states, the

¹ The sharp reduction in the unemployment in Spain and Ireland in the second half of the 1980s remains modest in relative terms, as the unemployment rate in these two countries is still the highest by far in the European Union at the end of the 1980s.

heterogeneity of unemployment remains so high that ‘talking about “European unemployment” is misleading’ (Blanchard 2005).

Although explanations of these different unemployment behaviours abound in the economic literature (see Blanchard 2005 for a review), there is a growing consensus about the key importance of labour market institutions in influencing labour market performance. Observing the different reactions of unemployment in the mid-1980s, Bruno and Sachs (1985) started to investigate the potential impact of institutions (and in particular collective bargaining characteristics) on economic performance. They related the differences in economic and labour market performance (low inflation, low unemployment rates, high employment rates) to the interaction between country-specific bargaining structures (partly captured by a corporatism index) and common supply shocks. Eichengreen and Iversen (1999) argue that, in order to initiate and sustain economic growth, labour market institutions should be able to adapt to rapidly changing production technologies and an increasingly heterogeneous labour force, and that the failure to introduce institutional reforms that could overcome collective-action problems in the labour market is considered as one reason for the poor labour market performance. Similarly, Blanchard (2005) refers to the poor fit between labour market institutions and the macroeconomic environment as the main characteristic of the evolution of the French labour market since the Second World War. More generally, economic institutions are important because they affect the structure of economic incentives in society (Acemoglu 2005).

The interest in labour market institutions has not been limited to academic work. Since the launch of the OECD Job Strategy and the EU European Employment Strategy, there has also been a growing consensus amongst policy makers that the “rules of game” of the labour market need to be adapted to new challenges such as demographic ageing, fast technological changes and rapid swings in the international division of labour. This is a crucial condition for reaping the benefits of a changing socioeconomic environment and avoiding its potential pitfalls.

The positive performance of countries that have reformed their labour market institutions shows that one-size-fits-all reforms cannot respond effectively to labour market problems. Many observers emphasise that the whole configuration of labour market institutions in a given country must be considered before they are reformed and, more fundamentally, that the design of labour market reforms is a key determinant of their success.

This paper selectively reviews the theoretical arguments and the empirical evidence of the literature on labour market institutions. While the literature traditionally treats labour market institutions as exogenous, attention shifted recently towards understanding the underlying causes of specific institutional arrangements. Understanding the genesis of institutions is often a precondition for reforming them. Section 2 highlights the new strand of literature presenting the institutions as the outcome of an endogenous process. Section 3 stresses the role of interactions involving labour market institutions in explaining labour market performance. As a consequence, the literature highlights the great importance of an efficient policy design exploiting these interactions wisely. Section 4 identifies general principles for achieving an efficient policy design at macro level through well-functioning bargaining institutions and the promotion of policy packages. Section 5 spells out the principles to attain an efficient policy design at the micro level. Section 6 presents some new empirical evidence based both on the FRDB database and on various panel analyses using the recent LABREF database on labour market reforms. While evidence does not show a major change in terms of intensity of labour market reform after the setting of the Economic and Monetary Union and the creation of the euro, the reforms aiming at strengthening the labour market attachment of fragile groups tended to have been successful in both raising their employment prospect and increasing labour market adjustment. Section 7 concludes.

2. LABOUR MARKET INSTITUTIONS AS THE OUTCOME OF AN ENDOGENOUS PROCESS

The economic literature tended to take institutions as given, treating them as purely exogenous. But a new branch of research is now attempting to better understand their formation as the result of endogenous processes. The question is therefore why labour market institutions are as they are, and to what extent the current configuration of labour market institutions might be desirable despite their sometimes unfavourable impact on labour market performance.

For instance, there has been a growing theoretical and empirical literature on the drivers of collective bargaining institutions (e.g. the degree of centralisation of collective bargaining) since the seminal work by Wallace and Kahn (1982) and Katz (1993). Schnabel et al. (2006) show that more or less the same set of variables play a statistically significant role in explaining the structure of collective bargaining in Britain and in Germany. These are establishment size, establishment age, foreign ownership, public sector affiliation and being a

branch plant. Heikkilä and Piekkola (2005) show that Finnish employers in firms that are large, foreign owned or operate in financial services desire the largest role for local bargaining in contract wage increase, while employees resist local bargaining, except when the firm uses performance-related pay.

Broadly speaking there are four basic but non-mutually exclusive views: The *legal theory* contends that labour market institutions and regulations are related to the historical origins of national laws. According to the *social conflict view*, institutions do not represent the interest of the society at large but rather that of groups that shape institutions in ways that maximise their own rents, while they could be by themselves a source of rents. According to the *efficient institution view*, institutions are chosen efficiently by weighing their social costs against their benefits. Lastly, *the second-best approach to imperfect institutional configuration* claims that the combination of institutions might be the result of second best equilibrium in the context of “inefficient” markets or in absence of corrective public mechanisms.

2.1 Legal theory

The legal theory contends that labour market institutions and regulation are related to the historical origins of a country’s laws (Botero et al. 2003). Common law countries rely more on contracts and private litigation to deal with market failures while civil law rely principally on the direct intervention of the government in the regulation of markets. Moreover, this view predicts that common law countries should have less generous unemployment benefits because they tend to rely more on markets to provide insurance against labour market risks.²

2.2 The social conflict view

According to the social conflict view, it is not the interest of society that institutions represent, but rather that of groups that mould institutions in ways that maximise their own rents. Hence, institutions do not necessarily coincide with a policy configuration that maximise total surplus. Anything that raises average wages and reduces the likelihood of dismissal will benefit typical labour market ‘insiders’, probably on permanent contracts and

² The evidence supports this view. Among the EU15 countries, the UK has the lowest expenditure on unemployment benefits as a percentage of GDP (0.3%), though the evidence is not conclusive as, for example, Greece and Italy follow the UK with respectively 0.4% and 0.6%. In addition, although income redistribution through unemployment benefits is limited in Anglo-Saxon countries, they have developed alternative ways to provide insurance and income redistribution.

well-represented by labour unions (see Lindbeck and Snower 1988). According to this view, institutions introduce a wedge between labour supply and labour demand, interfere with labour market relocation, distort relative price and reduce employers' ability to make adjustments at the intensive and extensive margin in the face of unexpected shocks. By impeding wage decompression and mobility they limit the possibility of improving workers' welfare and production efficiency. In terms of labour supply, institutions that drive a wedge between utility maximising outcomes and socially efficient outcomes create disincentives to labour market participation and mobility which ultimately lead to higher unemployment. In terms of labour demand, when workers do not adjust their wage claims, an increase in employers' funded social benefit will increase labour costs and reduce employment.³

In the literature on economic institutions two versions of this view, with different implications for the reform strategies to follow, can be identified. The first version considers institutions to be largely shaped in practice by the political power of political groups (Acemoglu et al. 2005). Although endogenous, not all groups will prefer the same set of institutions. Indeed, different institutions entail a change in the distribution of resources which is a cause of *conflict of interest* between different groups over the choice of certain institutions. This conflict is likely to arise when there are rents that can be extracted by the group with political power that will try to shape institutions accordingly to this task. Hence economic institutions are developed to facilitate the appropriation of existing rents by certain groups. This implies that labour market institutions that keep the conflict of interest under control are likely to emerge when rents are low. Reducing rents in the good markets reduces workers' incentives to fight for a share of these rents (Blanchard and Giavazzi 2003) and increases the positive effects of the wage moderation on the unemployment rate (Esteveao 2005). Sub-optimal outcomes are also the result of contracting problems when policy makers represent only narrow interests (i.e. reforms are not comprehensive) or are unable to make commitments that constrain future actions (Castanheira and Esfahani 2003), or when product market reforms are not sufficiently widespread (Boeri 2003). Moreover, the distribution of power can change over time and institutions that work efficiently under certain conditions are unsuitable in a different environment.

³ This is likely to occur when workers do not feel the link between taxes or social contributions paid by them and their current and future benefits they are entitled to receive.

The second view considers institutions themselves a source of rents (Saint Paul, 2000).⁴ The existence of rent-creating institutions creates opportunities to develop rent-protecting institutions. And the less competitive the labour and product markets, the lower the turnover and labour mobility, and the higher the gap between the productivity of skilled and unskilled workers, the higher these opportunities are. The complementarity between rent-creating and rent-protecting institutions explains why certain institutions come together (e.g. wage compression and strict employment protection regulation) while there is an under-provision of others (e.g. unemployment benefits). The presence of a status-quo bias is reinforced by such complementarities which make reform difficult, if not impossible, without breaking up the status quo. The viability of reform is therefore strictly dependent upon the job prospects of those that, because of a particular institutional setting, are excluded from the redistribution. Improving their employment chances may win their support against the constituency of the insiders. Hence, reforms that preserve the status of the insider introducing more flexible arrangements for the outsiders (for example, by liberalising temporary contracts without addressing labour market regulation for other employees, or by introducing pension reforms that apply only to ‘new entrants to the labour force’), although marginal, may reduce the influence of the insiders and help change the status quo (Boeri 2003)⁵. However, partial labour market reforms may lead to a higher turnover of low productivity entry-level jobs, longer spells in unemployment, lower welfare and lower overall productivity (Blanchard and Landier 2002), which risks putting the economic system on an adjustment path converging toward a two-tier system equilibrium.

2.3 The efficient institutions view

According to the third view, institutions are chosen efficiently by weighing their social costs against their benefits. Hence, different institutional settings may be efficient ways of dealing with market failures in certain circumstances but not in others (Blank and Freeman 1993, Blanchard 2002, Botero et al. 2003). Societal preferences respond to shocks and are shaped by how these shocks interact with capital market imperfections that constrain access to

⁴ In Saint Paul (2000) labour market institutions, such as minimum wage, employment protection laws and collective agreements, arise as a *politico-economic* equilibrium from a redistributive conflict between skilled workers on the one hand and low- and medium-skilled workers on the other, and between those in employment and those excluded from redistribution (the unemployed).

⁵ This reform strategy is not viable for product market reforms because of the strong opposition of the incumbents which is counterbalanced by the pressure of the population (consumers) for more competitive product markets (Boeri, 2003).

activities that reduce unemployment and income risks. Economic institutions are important because they modify the structure of economic incentives.

In a perfect competitive model, institutions distort incentives, generate inefficient outcomes and are clearly suboptimal. However, because of imperfect and asymmetric information in capital markets, allocation in *laissez-faire* economies is far from the optimal outcome predicted by the textbook version of competitive markets. The consequences of incomplete insurance markets have been explored in the cases of redistributive taxation (Varian 1980), the determination of efficient unemployment insurance with matching frictions (Acemoglu and Shimer 1999), redistributive social policies (Benabou 2000), employment protection (Bertola 2004; Bertola and Keoniger 2004), and institutions narrowing the wage distribution (Agell 2002). Taken together these studies suggest that when capital markets are incomplete and/or when workers are risk-averse, certain institutional configurations can improve the social welfare.

When considering insurance arguments, the benefits of insurance should be weighed against the cost of reduced efficiency and, possibly, of higher unemployment. Although labour market institutions entail information costs and deadweight losses, they can also be welfare-improving when markets are imperfect and incomplete. Institutions such as unemployment benefits and Employment Protection Legislation (EPL) are motivated by the desire of credit-constrained risk-averse agents to protect their consumption from income volatility, even though consumption smoothing can occur at the expense of production efficiency and low employment⁶. The insurance element of these institutions also interacts with their rent-seeking dimension, which reduces the cost of non-employment (because of replacement incomes) and makes the wage distribution more compressed and stable at the cost of low employment rates. This adverse effect of wage compression is especially pronounced for those with high labour supply elasticity (young workers and women with children) or facing high labour demand elasticity (the youth, the low skilled and other disadvantage groups such as the migrants). However, a high level of social insurance can be consistent with low unemployment and high participation *as long as* it is provided efficiently and yields the proper (financial and non financial) incentives to remain employed. This is shown by the experience of the Nordic Countries (Andersen et al. 2007). The high

⁶ The higher wages for those remaining employed and financing the income of non-employed individuals have a first order effect on the welfare of risks-averse workers who prefer to smooth consumption inter-temporally across different states of the world (Bertola and Keoniger 2004 and Bertola 2004).

participation rates of these countries despite the high tax rates and the generous social safety seems puzzling if one discards the effective and powerful role of the non-financial incentives. In fact, the distortions created by the high (marginal) tax rates could be undone (or reduced) by imposing conditionalities and eligibility conditions (i.e. tight non-economic incentives). Notwithstanding the high financial disincentives, the employment conditionalities linked to tax, benefits and transfers (both monetary and in kind) increase the value of the time lost to claim these benefits, which reduces the reservation wage and boosts the labour supply. This means that the net of benefits tax rate goes to zero, which explains the high participation rate (Andersen 2009).

2.4 The second best view: rationale for “inefficient” configuration of institutions

When taking a second-best view and a comprehensive perspective, some institutions - inefficient on their own - might prove to be welfare-improving if combined with other inefficient institutions. The trade-off between unemployment benefits and EPL in the provision of insurance against labour market risks is the most documented example (e.g. Buti et al. 1998, Boeri et al. 2003) of how a welfare improving configuration of labour market institutions can depend in real economies on the characteristics of financial markets (Bertola and Koeniger 2004)⁷, the frequency and nature (sectoral or aggregate) of labour demand shocks, the structural characteristics of the economy⁸ and the efficiency of collective social insurance schemes. Figure 4 displays a slightly different version of this trade-off from the one commonly documented. On the horizontal axis the figure reports the expenditure on unemployment benefits per unemployed divided by the GDP per capita. This measure indicates the proportion of GDP per capita allocated to unemployment benefits per unemployed person. The rate of substitutions between these two institutions is negatively related to the extent individuals can self-insure against unemployment risks by accessing a developed financial market (e.g. Bertola 2004, Boeri et al. 2003) and to the existence of other instruments of insurance and income re-distribution. The degree of substitution between EPL and unemployment benefits becomes lower if individuals can insure themselves against

⁷ The authors show that there is a significant correlation between EPL and borrowing constraints, which is related to the attractiveness of institutions reducing labour income fluctuations in countries where under-developed financial systems reduce consumption-smoothing opportunities.

⁸ For example, Hassler et al. (2001) argue that less mobile workers acquire more specialised skills and prefer more generous unemployment insurance. The negative relationship between the mobility rate and unemployment insurance is strongly supported by the data. On average high mobility countries are characterised by low unemployment insurance while low mobility countries have the most generous unemployment insurance system (Hassler et al. 2001). At the same time generous unemployment benefits make specialised workers more selective, since they have more to lose from switching to a different job, which increases the proportion of specialised workers and reduces their mobility. The prevalence of sector-specific shocks endogenously raises the need for unemployment insurance and is associated with a relatively high unemployment rate and rate of specialisation.

unemployment or income loss with other means. For this reason, the UK and Ireland, both of which have a lower level of EPL and unemployment benefit than the EU average, have been excluded, as they offered a wide access to a developed financial market as an alternative to EPL and unemployment benefit. A negative and statistically significant (at 90%) relationship is found in Table 4 with a pairwise coefficient of determination of 0.5.

The substitution between these two institutions can be related to the form of redistributive policies. The choice of redistributive institutions that smooth out unemployment risks hinges upon the efficiency of both market (e.g. bank credits, special insurance contract against job loss) and non-market mechanism (e.g. guaranteed minimum income or social safety nets) in delivering such redistribution. When redistribution policies are less efficiently managed through taxes and subsidies, insurance against income risks is usually provided via strong employment protection legislation. Figure 5 is suggestive of this nexus between the equalising properties of redistributive policies and the intensity of labour market regulation provided by employment protection legislation. It suggests a strong negative relationship between redistribution of tax/benefits and EPL. The pairwise coefficient of determination between the EPL and the redistributive effects of the tax/benefit system is 0.7, which is statistically significant at the 99% confidence interval. Hence, more redistributive tax/benefit systems have less strict EPL. Similarly tight employment protection legislation is associated with a relatively low reduction in income inequality reached through the tax and benefit system.

3. THE ROLE OF INTERACTION INVOLVING LABOUR MARKET INSTITUTIONS IN EXPLAINING LABOUR MARKET PERFORMANCE

This section considers the direct and indirect impacts of labour market institutions on labour market performances, as identified in the empirical literature. During the 1990s there has been a wealth of studies focussing on the effects of institutions on employment performance. The main results of some recent studies, often cited, are summarised in Table 1 at the end of the paper. Among these, three main strands may be identified. Some studies concentrated on the role of institutions, others focussed on the interaction between shocks and institutions. More recent analyses insisted on the complementarities between institutions and on the effects of institutions on relative wages and on relative employment performance. As a consequence of the importance of complementarities and interactions, the empirical literature cannot reach any full consensus on the role of each institution.

3.1 Direct impacts of labour market institutions

In a first set of studies indicators of labour market institutions are used to explain differences across-country in unemployment rates (Layard and Nickell 1999) or the evolution of unemployment over time in a panel of OECD countries (Elmeskov et al. 1998). Unemployment is positively associated with generous unemployment benefits, high tax wedge, and high union coverage and negatively associated with active labour market policies (ALMPs) and high co-ordination of bargaining. The role of employment protection legislation and union density is uncertain. However, a large part of the change in structural unemployment remained unexplained. One major difficulty encountered by these studies is that indicators of labour market institutions are only slowly time varying, i.e. certain institutions were already in place in the 1960s in many EU countries when European unemployment was lower than in the US.

Nickell et al. (2003) propose a model where changes in institutions explain the evolution over time of the unemployment level and shift in the Beveridge curve both alone and when interacted with variables representing aggregate demand shocks, productivity shocks and wage shocks. The benefit duration, union density and low mobility shift the Beveridge curve outward (which implies higher equilibrium unemployment), while employment protection shifts it inward. When they turn to explaining unemployment, the generosity of the system of unemployment benefits (both in terms of levels and duration) and labour taxes increase unemployment, although in the latter this happens to a lesser extent in countries with co-ordinated wage bargaining (i.e. the interaction between the tax wedge and the degree of coordination has a coefficient which declines the more coordinated is bargaining). These studies focus on the time variation in the data controlling for country fixed effects and differ from the first generation study which use cross country analysis (Nickell 1997).

Rather than dealing with unemployment behaviour, Mourre (2006) focuses on the impact of labour market institutions on employment growth. In particular, he tests a break in employment equation for OECD countries in the late 1990s and early 2000s and relates the structural break (or absence of such a break) across countries to changes in labour market institutions and active labour market policies (along with the change in sectoral structure). The countries experiencing a (positive) change in their employment pattern since the late 1990s are mainly concentrated in the euro area. Among the relevant institutional factors likely to have contributed to rising aggregate employment in the euro area in recent years are the

strong development of part-time jobs, lower labour tax rates and, more tentatively, less stringent employment protection legislation and greater subsidies to private employment.

Gomez et al (2004) use annual information on firm level data to study the effects of institutions on job flows in Europe controlling for the impact of firms characteristics. The empirical analysis suggests that countries with tight workers' protection laws (employment protection legislation or EPL) have relatively low job reallocation and job creation rates, while the effect on the job destruction rate is statistically insignificant. The duration of unemployment benefits and the degree of co-ordination of wage bargaining reduce job flows while the effect of the tax wedge is significant only in the case of the job reallocation and the job creation rate. Finally, employment subsidies dampen the job creation and the job destruction rate while the effect on the job reallocation rate is insignificant.

Focusing on the new European Union member states and using recent data, Fialová and Schneider (2008) confirm that high taxes increase unemployment, while active labour market policies tend to reduce it. More stringent employment protection and higher taxes weigh down on the participation rate and the employment rate. Moreover, there seems to be a difference in the institutional effects between "old" and "new" EU member states.

3.2 The interactions between labour market institutions and macroeconomic shocks

A second group of studies tries to reconcile the role of institutions with labour market performance focusing on the interactions between labour market institutions and macroeconomic shocks. The essence of these studies is that transitory increases in unemployment due to shocks may be prolonged by labour market institutions that restrict labour market flows and protract the adjustment of real wages. For instance, in their influential paper Blanchard and Wolfers (2000) show that macroeconomic shocks explain the average rise in the unemployment rates but that institutional variables account for the cross-country variation in the unemployment rates. Economic shocks explain the cross-country heterogeneity in the unemployment rates levels only when interacted with labour market institutions. The empirical analysis suggests that the countries with long-lasting unemployment benefits, high employment protection or little co-ordination of bargaining experience longer periods of high unemployment rates. The basic idea of this and other studies conducted in this vein (e.g. Fitoussi et al. 2000, Bertola et al. 2002a) is that certain institutions protract the adjustment of wages to temporary shocks and prolong their effects on

unemployment, transforming a transitory increase in unemployment into a permanent or long-lasting one. Although employment performance is driven by shocks, the cross-country heterogeneity in such performance is related to different degrees of real wage adjustment which tend to be influenced by the labour market institutions in place.

An alternative view on the sources of unemployment has been explored by Ljungqvist and Sargent (1998). They argue that in period of economic turbulences there is a higher probability of skills deterioration. When shocks requiring a restructuring of the economy occur, jobs destroyed in mature sectors should be replaced by jobs in new sectors where “new skills” will be accumulated. When incentives to participate are distorted, for example because of generous unemployment benefits or long benefit duration, laid-off workers will not accept a reallocation and there can be a phase during the transition where unemployment goes up. The longer is the unemployment spell, the higher the risks of skills’ depreciation and the longer the unemployment duration. The analysis is in line with the view that incoherence between labour market institutions and the economic environment gives rise to high equilibrium unemployment.

Nickell et al (2005) explore how much of unemployment patterns can be explained by changes in the institutions alone and the additional gains from extending the analysis to the interactions between shocks and institutions. Changes in time-varying institutions provide a part of explanation of long-term unemployment shifts in the OECD countries - about 55% of the 6.8 percentage points increase in the unemployment rate in OECD European countries between 1960 and 1995- while the interaction between shocks, captured as in Blanchard and Wolfers (2000) with time dummies, does not add very much to the explanation of the unemployment rates.⁹ Bassanini and Duval (2006) run similar analysis but use more recent data (going up to 2003). They also split the tax wedge between labour taxes and consumption taxes. Their results are close to those of Nickell et al (2005).

3.3 The interactions between labour market institutions themselves

A third strand of important studies looks at interactions between different labour market institutions. Coe and Snower (1997) argued theoretically that a wide range of institutions may have complementary effects on unemployment. A simple description of importance of

⁹ The use of time dummies to capture shocks makes the implicit assumption that shocks have been the same across countries but exert different effects on each country.

complementarities is taken from Belot and Van Ours (2004). In a standard model of imperfect competition, unions and firms bargain over the wage (right-to-manage model) to maximise their relative rents. Once wages are set firms decide how much workers to hire. In equilibrium labour market institutions determines workers' relative bargaining position. The standard labour demand and wage curve could be written: $L^d=g(\omega,\Psi)$ with $g_\omega<0$; $\omega=h(L,\Theta)$ with $h_L>0$, ω the wage rate, Ψ and Θ representing institutional parameters such as ALMPs, UB, EPL, minimum wage, etc. It can be shown that the net effect of a change in institutions on employment:

$$L_\chi = \frac{g_\omega h_\chi + g_\chi}{1 - g_\omega h_L}$$

where χ is a set of common institutional variables affecting both labour demand and labour supply. In this model, reforms influence employment through three effects. A labour demand shifting effect captured by the derivative g_χ , a bargaining shifting effect represented by $g_\omega h_\chi$, an adjustment effect $g_\omega h_L$ that depends on the slope of labour supply and labour demand. Conditional to a specific institutional configuration, countries can be ranked according to the effects of institutions on employment. For the purpose of illustration, a decrease in the unemployment benefit replacement rate shifts the wage curve downwards by lowering the reservation wage. However, because of the hypothesis of convex decreasing returns to labour affecting labour demand, this increase will have a stronger (positive) effect on employment in low- tax countries than in high tax countries (Figure 3)¹⁰.

Bertola and Rogerson (1997) find that “despite the stringent dismissal restrictions in most European countries, rates of job creation and job destruction are remarkably similar in across European and North American labour markets”. This similarity, notwithstanding significantly different labour market institutions, does not remain unexplained when one looks at the configuration of labour market institutions as a whole. In a model of competitive behaviour on the part of employers and workers but with mobility decisions costly for workers, the intensity of relocation in labour markets with low firing costs and low wage compression (resulting from highly decentralised wage-setting) is similar to that of labour markets with high firing costs and high wage compression (as a result of highly centralised wage-setting).

¹⁰ The assumption in this textbook example is that in countries where taxes are high, the wage curve is shifted upwards as the wage-earners tries to recoup the loss of purchasing power. Therefore, with an unchanged labour demand, the equilibrium is shifted leftward along the labour demand curve, resulting in higher wages and lower employment. In the left part of the (convex) labour demand curve, the negative slope is steeper.

By reducing the wage adjustment at the margin wage compression increases the adjustment of employment, while labour adjustment restrictions dampen job creation and job destruction. Hence, the effect on the job flows is ambiguous. The presence of high firing costs may also reinforce the preference for rigid wage regimes (Boeri and Burda 2004). Firing costs are combined with renegotiation costs in their model, further increasing the utility of rigid wage for workers who keep their jobs. Different policies can indeed have offsetting effects on the observed job flows.

Focusing on how collective bargaining systems (bargaining level, coordination, and corporatist institutional arrangements) influence macroeconomic performance in industrialized countries, Flanagan (1999) concludes that complementarities between key institutions and between institutions and the economic environment may be more important for macroeconomic performance than the effects of individual institutions.

Belot and Van Ours (2001, 2004) find empirical support to the view that institutions strongly affect performance only when their effects on employment reinforce with each other. The generosity of unemployment benefits reduces both the unemployment and the employment rate which of course implies a decline in the participation rate. The existence of a positive interaction between labour taxes and the replacement rate suggests that different combinations of the replacement rate and of labour tax rate are consistent with the same unemployment rate. The effects of employment protection on the unemployment rate vary according to the bargaining level: they are negative when wages are set at the firm level, positive when bargaining is at the industry level and insignificant when wages are set at the national level. Similarly, union density raises unemployment only in decentralised bargaining systems. However, these effects become insignificant when time and country effects are included in their regression, implying that that the relationship between performance and labour market institutions reflects more fixed differences between countries and time periods than within country changes in institutions¹¹. The presence of complementarities makes difficult to predict *a priori* the response of equilibrium employment to changes in the institutional variables, the overall effect on employment and unemployment depending on how the behaviour of rent seeking agents (i.e. their bargaining position) and on the existing feedbacks between wages and employment are influenced by such complementarities.

¹¹ Likewise, Mourre (2006) finds that the significance of the interactions between labour market institutions does not appear robust to the specification chosen (logarithm of total employment versus employment rate), except for the joint negative effect of total labour taxes and unionisation.

3.4 Limitation of the "macroeconomic" point of view

Taken together, these studies suggest that labour market institutions can explain a significant share of cross-country differences in labour market performance. Changes in institutions alone, however, do not explain all the evolution of unemployment over time. Time varying institutions, particularly when interacted with macro-economic shocks, explain more *cross-country* differences in unemployment rates than the *within-country* evolution of the unemployment rate.

The macroeconomic studies considered do not reach a complete consensus on the role of each labour market institution and the way they interact between each other and with shocks. This is perhaps unsurprising given the different specifications and methodologies employed, the scope for omitted variables (including theoretically important institutional aspects, such as enforcement of benefit eligibility criteria, on which there are few data).¹² Moreover, the econometric estimations using macro indicators of labour market institutions tend not to be robust, as the latter embed various institutional aspects and mechanisms, which cannot be disentangled, i.e. there is a degree of measurement error in the variables usually available to proxy policy-induced changes. The role played by interactions between institutions suggests that certain institutional configurations can potentially compensate for the negative effects of each institution taken in isolation.

The fact that labour market institutions are multidimensional makes difficult to identify in aggregate panel regressions the impact on unemployment of interactions between all different policies, all institutions and all shocks (Flanagan 1999, Baker et al. 2004, Blanchard 2005, Freeman 2005).

While labour market performance is clearly influenced by the mismatch between institutions and the economic structure (Buti et al. 1998, Boeri 2003), the link between institutions and performance is certainly not stable over time. The increased degree of competition in the product markets (Boeri 2003) and the nature of technological progress have changed the labour market response to pre-existing labour market institutions (Mortensen and Pissarides 1999c). In a context of redistributive conflict between employers and employees, labour market institutions that maximise social welfare when markets are relatively closed turn out to be too costly in terms of employment loss when markets become

¹² See for example Houmann et al. (2005).

more exposed to the international competition. (Bertola and Boeri 2002, Bertola 2004).

When the change in the structure of production requires less wage compression to improve the relative employment performance of groups exposed to higher risks of labour market exclusion, institutions justified by insurance arguments may not be anymore welfare improving. As economic interactions between institutional arrangements and agents' preferences are potentially substantial, the role of policy design, at both the macro and the micro level, appears crucial to achieve the objective of a well functioning labour market. The following two sections analyses the design of the labour market institutions at both macro level, as a key factor for their adjustment to changing environment/needs and their efficiency.

4. THE POLICY DESIGN AT THE MACRO-LEVEL: BARGAINING INSTITUTIONS AND POLICY PACKAGING

The policy design at the macro-level covers two main issues. The first concerns the quality of industrial relations, in particular the trade-off between all encompassing labour unions and firm level bargaining. The second deals with the efficiency of reform package, as opposed to single policy measure.

4.1 Bargaining institutions and wage setting: is decentralised bargaining better?

At the macro level, a well functioning labour market should contribute to increasing the rate of participation and employment, while reducing the rate of unemployment consistent with a stable inflation rate. Growth- and stability-oriented macroeconomic policies can effectively be supported by a wage-formation mechanism which sets wage growth in line with price stability and productivity developments.

The wage-formation mechanism is characterised by different levels of bargaining. Theoretical analyses and empirical testing have shown how both centralised (at national or multi-industry level) and decentralised (at the level of firms) bargaining systems perform better than intermediate ones (at the level of industries), as the co-operative behaviour of the former creates incentives to moderate wage claims, while market forces restrain wages when bargaining occurs at the plant level. The hump-shaped relationship between bargaining centralization and wage outcomes (Calmfors and Driffill,1988), derives from a negative externality of high wages on employment which is internalised only when bargaining is at the firm or at the macro level. Conversely, when bargaining is at the intermediate level (say

industry level), the effects of too high wage claims on employment are not adequately assessed as industry unions consider that the cost of excessive wage settlements could be transferred onto other sectors. The internalisation of this externality reduces the aggregate wage pressure and improves labour market performance.

Anything affecting the capacity of internalising the costs of excessive wages/labour costs changes the shape of the relationship between macroeconomic performance and degree of centralisation/cooperation of bargaining. For example, Danthine and Hunt (1994) show that with increased competition arising from higher economic integration, the hump-shaped pattern flattens out, implying that the extent of bargaining centralization matters less. Yet the post-integration wage-price structure is closer to the configuration prevailing in decentralized economies, which make more difficult for economies characterized by centralized wage bargaining to adjust to more competitive environment. With strong externalities across industries, the hump shaped relationship between bargaining co-ordination and macroeconomic outcomes becomes downward-sloped: the level of wages decline with the level of centralisation of bargaining. The level of employment rises with the level of centralisation/co-ordination along a negatively sloped employment-wages relationship (Calmfors 1993).

The relationship becomes linear when the influence of unions in the political process determining labour taxation and its structure is considered. Unions can be assimilated to large encompassing coalitions recognising the link between taxes paid and benefits received. In Gruber et al. (1993) wage bargaining affects performance through a fiscal externality. Centralised unions *look through the budget*, and internalise the effect of their wage claims on the tax base and on the provision of public goods that enter into the union utility function: labour taxation is higher but less distorting. Thus centralised unions recognise that too high wage claims lead to a drop in employment, in the tax base and, ultimately, in the provision of public goods. The wage moderation effect of public good is higher, the higher the marginal utility from public good is (Kilponen and Sinko (2003)).

Teulings and Hartog (1998) also point out the important role that corporatism (i.e. centralised and economy-wide bargaining or institutionalised coordination in the wage-setting process) could play in the adjustment of wages to macroeconomic shocks. Following an aggregate shock, it would be optimal to adjust nominal wages, although this could not be achieved between a firm and a trade union, since they set wages every year at most so as to avoid frequent negotiations and ensure stability. In such context, corporatist organisations,

such as centralised bargaining, can coordinate the adjustments to macro shocks, without interfering with the idiosyncratic relationship between trade unions and individual firms.

Much more uncertain is the relative performance of a highly centralised bargaining compared with a purely decentralised bargaining. The evidence on OECD countries (Boeri et al. 2001) suggests that, while levels of co-ordination account more for cross-country differences in the unemployment rates than union density and bargaining coverage, high co-ordination tends to be associated with lower unemployment than decentralised bargaining. However, because of either wage floors or minimum wages, coordinated bargaining also entails greater compression at the bottom of the wage distribution (Blau and Kahn 1996), with negative effects on relative employment of low-wage earners. Blau and Kahn (2000) confirm that bargaining institutions compress the wage distribution and raise the relative wage of specific socio-economic groups (young men, young women, less-educated men, less educated women), which results, especially for men, in lower relative employment, while in the case of women the higher relative wages raise the employment rate by stimulating labour supply. The wage compression also modifies the industry distribution of employment shifting employment away from industries with low wages (Davis and Henrekson 2000) and widens the existing regional disparities. In contrast, decentralised bargaining allows for higher relative wage flexibility, leaves wider room for bargaining on issues such as pay, working time, and working condition. It also makes possible the introduction within firms of performance-related pay schemes, where wage rises are used to motivate and improve workers' productivity.

In practice, it is not clear whether the balance of advantages and disadvantages is in favour of highly centralised or purely decentralised bargaining, partly because bargaining often takes place at two levels, which blurs the distinction between centralised and decentralised wage settings. Traxler et al. (2001) do not detect any robust association between bargaining centralisation and performance and questioned the explanatory power of centralisation *per se*. The reason is that many studies fail to systematically differentiate between centralization and coordination, tending thus to ignore decentralized forms of coordination. This is a major theoretical flaw, since it is coordination that constitutes the capacity for internalizing wage externalities. Indeed, the commonly agreed trend towards bargaining decentralization hides two different patterns. While many countries moved to uncoordinated bargaining on the basis of fully decentralized and single-employer settlements,

others have retained multi-employer bargaining at the central or industry level while leaning toward “organized” decentralisation. “Organized or co-ordinated decentralisation” or two-tier bargaining can be seen as an endeavour to meet the conflicting demand for decentralisation and coordination of bargaining, especially in countries where multi-employer bargaining settlements prevail (Traxler et al. 2001 and 2003). Unlike single-employer bargaining, multi-employer settlements could on their own impact the main macroeconomic variables such as employment and inflation, which give strong incentives for all bargaining actors to seek cooperation with one another.

The relative merit of centralisation, “organised” decentralisation and uncoordinated decentralisation should be appraised with respect to the double objective of macroeconomic stability and microeconomic flexibility. On the one hand, centralisation delivers wage restraint and relative wage rigidity, on the other hand, uncoordinated decentralisation favours relative wage flexibility and discourages wage moderation (Calmfors 1993). In the context of a monetary union and to reduce regional disparities, a gradual shift from centralised towards more decentralised bargaining is clearly desirable, perhaps with an adequate mix of both systems. For example, a two-tier system (“organised” decentralisation”) that establishes at the central level the framework of labour regulation and the growth rate of wage compatible with price stability, leaving at the decentralised level room for bargaining according to local or sectoral conditions can replicate the positive aspects of both and be welfare improving.

A last point is that the impact of institutions cannot only be discussed in terms of the level and co-ordination of bargaining. Union membership and its decline observed in many countries can undermine the effect of centralised bargaining, especially when a large fraction of workers is non-unionised. The Workplace employee relations survey of 1998 (WERS98) data suggests the wage of many non-union workers is set at the decentralised level of the firm (Schnabel et al. 2005).

4.2 Broadening the reform package?

As argued in the previous section, the presence of an opportunistic behaviour may give rise to a status-quo bias which will keep inefficient institutions from changing. Moreover, because of the general uncertainty on the costs and benefits of reform, different socio-economic groups could be engaged in a *war of attrition* - it takes time for each part to learn about the costs that the other can bear and the conflict can be brought to a standstill - which

delays the reform process (Alesina and Drazen 1991). Finally, when reforms entail distributive effects (i.e. they are expected to favour certain socio-economic groups at the expense of others), uncertainty about who will gain from reform can prevent its adoption when the winners cannot commit to compensating *ex-post* the losers (Fernandez and Rodrick 1990).

An institutional framework that can handle these redistribution problems may enhance the cooperation between social partners and government and develop a sense of trust which makes reforms process credible. Under these circumstances, the packaging of reforms and a framework which promote cooperation may make reforms politically feasible. By exploiting the interactions between institutions, a strategy where different measures are part of a long term policy package can make reforms viable in the long term. Coordination may be achieved either by formal contacts between the social partners and the government or by the government incorporating *ex-post* the practices developed by the social partners in the collective agreements.

However, a broad reform strategy is a necessary but not sufficient condition for a reform process to be viable. When there is an uncertainty on the transition cost of comprehensive reforms, the high reversal costs that are perceived by the agents may make *ex-ante* the reform unfeasible. In contrast, a gradual approach may make reforms feasible by reducing the costs of trial and error and by creating the constituencies for continuing the reform (Dewatripont and Roland 1995).

5. THE DETAILED POLICY DESIGN AT THE MICRO-LEVEL

This section analyses the importance of the policy design at the micro-level, which should first take due account of the trade-off between efficiency and equity, which is likely to occur in many (but not all) instances. Then three key guidelines for a better design of incentives at the micro level have been identified by an abundant literature in economics and political sciences. These key principles are the proper exploitation of incentives, the need for targeting and the adequate functioning of institutions in charge of implementing labour market policies. These principles should apply independently of country-specific characteristics.

5.1 The trade off efficiency/equity: does it exist in all cases?

At the micro level, a well functioning labour market requires reforms that price in workers with low labour market attachment and improve the matching between unemployment and vacancies. A well functioning labour market should also be inclusive, i.e. reduce the risks of marginalisation and of long-term unemployment. This is also the level where labour market policies meet social policies. The debate on the reform of the European labour market has been flawed by the perception that there is always an inescapable trade-off between equity and efficiency, as if European countries were at any time on the efficiency frontier.

Although the management of taxes and transfers entail administration and deadweight costs and risks of “welfare dependency”, one can envisage situations where policy design reduces the leakage that society has to endure in order to achieve efficient social policies. When the proportion of governments’ budgets going to non-redistributive purposes is high and the levels of redistributive taxation low, there are policy situations that produce greater equity without major efficiency trade-off and there can be even complementarities between equity and efficiency. The costs in terms of efficiency loss of transfers are likely to be small when they go to segment of the population with no capacity of changing their behaviour, when benefits are paid conditional to behavioural requirements or when payments change the behaviour or the opportunities in such a way that increase income in the future (Blank 2001). While the first condition holds only in the case of social policies *stricto sensu* (e.g. policies dealing with poverty), the others are clearly relevant for the labour market policies. This brings attention to the role of effective designing of policies at the micro level.

5.2 The importance of financial incentives to work and of their profile over time

The experience of successful reforms highlights the role played by incentives (Madsen 1998, Van Ours 2003, De Koning et al. 2004, Blundell 2004). Successful reforms are generally based on the combination of carrot and stick. The carrot could be time-decreasing unemployment benefits to encourage active job-search or setting up financial incentive – net income gains - to take up a job or get to the labour force through for instance the provision of in-work benefits. Financial incentives, which are the reverse of the marginal effective tax rate borne when taking up a job or increasing the work effort, influence the labour supply decision (Carone 2005). For instance, taking up a job is often associated with the loss of

unemployment benefits but also to the increase in income taxes and/or the loss of other means-tested benefits (e.g. family or housing benefits). The tax and benefit system should be reformed together so as to remove the various incentives to remain unemployed, inactive and in low-paid jobs.

By reducing the relative gain of activity compared with inactivity, disincentives to work could prevent from actively seeking a job. For instance, unemployment benefits raise the reservation wages and discourage job search. Since job-search effort cannot fully be observed, unemployment benefits are subject to moral hazard. The increase in workers' fall-back utility in the case that a hiring contract is not concluded reduces the cost of unemployment from employees' viewpoint and increases wage pressures. In equilibrium, unemployment rises and employment falls. Reducing the level of unemployment benefits may increase the financial incentives to work.

The time profile of benefits is generally more important than their initial level to avoid benefit dependency and risk of long-term unemployment. In search models, under the assumptions of risk adverse agents and no (or low) unemployment benefits, the unemployed are likely to accept jobs even though, at the market interest rate, further search would be rewarding in terms of jobs with higher productivity and wages. This may be due to capital markets imperfections. In such a context and with risk neutral workers, unemployment benefits act as a subsidy that finances consumption during search, encourages further search and improves the allocation of resources¹³. Making unemployment benefits decline over periods of increasing unemployment spells is a key condition for encouraging one's taking up a job, while providing good initial conditions for an efficient job search without unnecessary haste. As the human capital is depreciated over time, the incentive to take up a job depends crucial on the decline of the replacement rate over time. This theoretical effect is broadly confirmed by the recent empirical literature (Bassanini and Duval 2006), which shows that the

¹³ Unemployment benefits also influence the composition of jobs created. In Acemoglu and Shimer (1999 and 2000) risk-averse workers are ready to accept lower wages in return of higher employment probability. Firms respond creating jobs with low risk and low wages. In equilibrium the labour market is characterised by too low-productivity, low-wage jobs. This allocation can be improved by a moderate increase in the unemployment benefits from low levels. This increase reduces the distortions created by uninsurable risks and improves the matching. In this case, unemployment benefits do not work as a search subsidy but as a way to deal with imperfect insurance. The increase in unemployment benefits reduces employment and improves productivity. Matching frictions and incomplete insurance are necessary conditions to get these results. In Acemoglu (2001) unemployment benefits and minimum wages increase labour productivity because they shift employment toward more capital intensive good (i.e. high wage) jobs. These institutions, may improve welfare by encouraging workers to wait for high wage jobs.

initial replacement rate of unemployment benefits tend to matter less than the unemployment benefit replacement rate observed after 6 months and after one year.

5.3 The role of non-incentive to work: conditionality, monitoring, sanctions and search assistance

The financial incentives to work ("carrot") should also be completed with non-financial incentives ("stick") to solve the problems of free-riding and moral hazard. The stick could be a set of credible sanctions, in particular eligibility rules set for having access to or keeping the benefits (e.g. employment record needed to have access to benefits, waiting periods before unemployment benefits are paid out), the regular control of eligibility conditions (e.g. obligation to accept job offers or to enrol in training) accompanied by the removal of unemployment benefits in case of non compliance. The threat of losing benefits if an employment offer is not accepted tends to raise the incentive to find a job (Jensen, Rosholm and Svarer 2003). There is increasing empirical evidence (e.g. Hasselpflug 2005, Andersen 2008) that making the payment of unemployment benefits strictly conditional upon complying with eligibility rules, work-availability conditions and job-search requirements, can offset the disincentive effects linked to these scheme and have a stronger impact on the decision to work than the level of benefits in itself.

Since monitoring usually takes place through the public employment services, the quality of services provided by the employment offices and the development of adequate synergies between the unemployment benefit providers and the public employment services are central to ensuring the enforcement of the job-search criterion.¹⁴ (Carone and Salomaki 2005, Andersen 2008¹⁵). The provision of unemployment benefits or other form of assistance should be conditional on job search and participation in job placement programs. Policies to increase the incentive to stay and enter into the labour market should build upon both active measures (raising the employability of job seekers) and passive measures (reducing the disincentive to work embedded in the benefit systems).

¹⁴ In fact, those countries where substantial welfare reform programmes were adopted in recent years, the modernisation of the unemployment benefit system regularly involved the development of strong complementarities between passive and active policies and the setting-up of close synergies between the unemployment benefits administration and the Public employment services.

¹⁵ Andersen shows that taxes can be made less distortionary if the tax-benefits system is designed in such a way to re-establish the right balance between insurance and incentives. The employment conditionality is working as a tax that reduces the congestion costs (e.g. created by cuing in front of the employment offices to claim unemployment benefits). Yet activation does not necessarily lessen the revenue requirements of the government. It does only if the direct costs of the conditionalities are more than offset by their effect on the reservation wage. Obviously this requires a high reservation wage, i.e. a generous welfare state.

The natural experience of the United Kingdom and the Netherlands concretely illustrates the role of non-financial incentives to work. In the framework of the New Deal for Young People in the UK, those participating in the programme have to go through a “Gateway” period, when they are assigned a “personal advisor”, before being eligible to benefit from subsidised training, subsidised private job or a job in the public sector. Participation in the programme is mandatory and those refusing to participate could lose their entitlement to the benefits. The evidence suggests that during this period, 40% of those going through the Gateway moved into unsubsidised jobs, 13% into subsidised employment, 30% into training or in job offered by the voluntary sector or by the Environmental task force (Bell et al. 1999). More generally, a system with monitoring and sanctions restores search incentives most effectively, since it brings additional incentives to search actively so as to avoid the sanction, allowing for higher benefits than otherwise (Fredriksson and Holmlund 2004). The experience of the Netherlands, where the conditions to claim benefits under the disability scheme have gradually been tightened, is also interesting. In the 1990s, the disability insurance premium was experience rated, the duration of benefits was limited to five years after which a re-examination had to take place and the disability examination no longer took the availability of suitable jobs with respect to education and previous occupation into consideration (Nickell and van Ours 2000). More recently employers and employees bear more responsibility for inflow of workers into disability (Van Ours 2003).

5.4 The need of targeting active policies towards groups at higher risks

When surveying the economic literature, the results based on aggregate data on ALMPs turn out to be not very robust either and display a low level of statistical significance. Scarpetta (1996) confirms that some ALMPs, such as job assistance, training programs and financial assistance for firm creation can stimulate employment. Nevertheless, Layard, Nickell and Jackman (1991) emphasise that the composition of spending is as important as the level. Moreover, as pointed out by Decressin et al (2001), ALMPs tend to be ineffective when they are not focused on well-defined beneficiaries. For example, broadly based employment subsidies may have little effect relative to the level of expenditures, that is, high costs per net job creation because of dead-weight losses or substitution effects detrimental to non-subsidised employment (displacement effect). The creation of employment in public administration appears even more costly by crowding out employment in the private sector due to the rise in labour taxes and wage pressures (Algan et al. 2002).

Successful reforms improved labour market performance when they modified the participation behaviour of groups with *low labour market attachment* (women, older workers, low skilled). This occurred when activation measures to tighten the eligibility conditions of unemployment benefits were combined with *targeted* measures directed towards groups at higher risks of inactivity or unemployment (De Koning et al. 2004, Van Ours 2003, Madsen 1998). For example, hiring subsidies to employers tend to be effective when targeted to disadvantaged groups (e.g. long-term unemployed), generating limited displacement and deadweight effects. This seems to be also the case for direct job creation and training measures.

When efficiently designed and targeted to those with low re-employment probabilities such as the long-term unemployed, these programmes improve the match and reduce the risks of dropping out of the labour force. By increasing the competition from the unemployed, ALMPs keep up the number of job seekers which contributes to wage restraint. This effect is expected to raise employment. However, since improved employment prospects reduce the perceived cost of non-employment, ALMPs also create an externality in wage setting which reduces the incentives for wage restraint with negative effects on employment performance.

5.5 The good functioning of institutions in charge of implementing labour market policies

Besides the quality of the design based on effectiveness or efficiency, a major problem of implementation arises. Taking the current example of “Hartz” packages in Germany, Fertig and Kluge (2004) stress the importance of the policy implementation and of the quality of administrative instruments when evaluating comprehensive labour market reforms.

The functioning of policy-implementing institutions can be a substantial factor of success. For instance, the adaptation of policy bodies to local conditions (decentralisation) and the participation of civil society and business (partnership) and the appropriate number of well-trained and qualified staff may be as useful as the policy definition on paper (OECD 2003). The lack of synergy between institutions can jeopardise the policy efficiency. An example is the absence of cooperation in many countries between the public placement agency and the unemployment benefit bodies. Moreover, the active job search assistance cannot properly work if the staff of public placement agency is performing purely administrative tasks (jobless recording and accounting) and has no knowledge of the labour

market. This implies suitable training to improve the ability of counsellors to better advise and assist the job seekers. It can also be considered whether private placement companies could be used as a complement of public agencies.

6. ANALYSING REFORMS IN THE EMU

Increased economic ‘turbulence’, globalisation, skill-biased technological change and demographic developments call in question the design of existing labour market institutions. With increasing competitive pressures, the lack of reforms raises the efficiency losses induced by the labour market institutions that only are motivated by distributional concerns (Bertola and Boeri, 2003). The need for labour market reforms was widely acknowledged, especially in the case of countries joining the EMU. The membership of the euro area makes a greater demand for adjustment capacity, since domestic monetary instruments (i.e. national monetary policy and exchange rate adjustment) are no longer available, while the creation of a common currency may increase the competition and regional specialisation and thus the frequency of asymmetric shocks. In the EMU labour market flexibility becomes a major channel of adjustment. The section first analyses the nature of the labour market reforms before and after the creation of the euro in 1999. It also estimates a panel data model to identify the effect of the reforms aiming at strengthening the labour market attachment of fragile groups on both employment and labour market adjustment to economic developments.

6.1 Brief descriptive analysis of reforms before and after the EMU

Data from the FRDB¹⁶ suggest that the advent of the third stage of EMU in 1999 did not coincide with an acceleration of labour market reforms, but with a continuation of existing reform strategy characterised by a sequence of small changes (incremental reforms), broadly heading towards a more flexible labour market. In the early years of EMU there was an increase in the number of marginal reforms implemented in all areas except pensions systems (Figure 5 – left panel). The reform process was characterised by a sequence of marginal reforms rather than by few radical changes, partly confirming the view that euro-area membership reduces the incentives for large-scale labour market reforms (Bentolila and Saint Paul, 2001). Yet, the change in the monetary regime did not represent a clear break as

¹⁶ The Fondazione Rodolfo DeBenedetti (FRDB) database collects information on reforms of EPL, Non-employment benefits, Pensions and Migration) in the EU countries. For each policy area, reforms are categorised as marginal or radical, as well as on the basis of their expected effects (increase/ decrease) on: labour market distortions, reward to labour market participation, generosity of pension systems and immigration policies.

marginal reforms prevailed also in the years before 1999. For instance, most of the reforms of the employment protection legislation were marginal, that is, consisting to increase the flexibility "at the margin". As shown in Table 2, euro-area countries experienced a sizeable increase in employment after 1998, which took the form of both permanent and temporary work positions¹⁷. Conversely, non-euro-area countries experienced an increase in employment only thanks to the increase in permanent employment. This different pattern is likely to have resulted from the ease of employment protection legislation for workers with a temporary contract and may be held responsible for an increasing labour market dualism in some euro-area countries.

Figure 5 (right panel) displays the number of reforms in the euro area according to their broad orientation (improving or hampering the functioning and flexibility of the labour market). This figure should not be interpreted *prima facie*, as the "reform accounting" approach remains a coarse descriptive approach which cannot capture the scope and level of ambition of a reform. All in all, the launch of the euro area does not substantially change the direction of labour market reforms. While the number of flexibility-friendly EPL reforms did not change, the number of flexibility-curtailing measures rises after 1999, only reflecting reform developments in a limited number of countries¹⁸. Since the launch of the euro area, there has been an increase in the number of non-employment benefit reforms aiming at rewarding the overall work effort (i.e. removing the financial disincentives to work and the dependency to unemployment and social benefits). After 1999, the reforms decreasing the generosity of the pensions systems continue to be more numerous than those increasing their generosity, although the gap is closing¹⁹. Pension reforms have an impact on labour market conditions, as they affect the incentive to stay longer in the labour market and influence older worker participation. Finally, reforms that tighten the migration policies are more prevalent, although migration-friendly reforms increase as well.

The effect of euro-area membership can be seen in the cross-country distribution of the number of marginal reforms. During the years that preceded the launch of the common

¹⁷ Exploring the existence of a break in the standard employment equation for the euro area as a whole, Mourre (2006) found robust evidence of a break occurring in 1997, that is, two years before the formation of the euro area. This is also confirmed using panel data analysis and country-by-country estimation.

¹⁸ In particular, many reforms have been adopted in Spain since 1999, aiming at reducing the duality of the labour market by tightening the regulations and incentives for temporary jobs.

¹⁹ The closing difference between the number of reforms decreasing and increasing the generosity of the pension system may partly reflect the fact that many far-reaching reforms were already implemented before 1999 to ensure the sustainability of the pension regimes and what was done does not need to be done again.

currency (1995-1998), countries doing more reforms increasing the flexibility of the labour market (by loosening the EPL -although at the margin-, by reducing the benefit dependency and the generosity of the pension system) were also those that performed relatively better in terms of both participation and employment rates (Figure 7). About 60% of the differences in the reforms increasing flexibility between 1995 and 1998 were accounted by the diversity in the initial levels of the participation rates. Similar patterns can be observed when the cross-section relationship is between reforms increasing the labour market flexibility and the employment rates. By contrast, in the EMU years, i.e. from 1999 onwards, the relationship between the reforms increasing flexibility and the level of the participation rate at the beginning of stage 3 turns out to much weaker (and negative), seen in Figure 7²⁰. This may suggest a generalisation of labour market reforms across euro area countries. The disappearance of the negative correlation would indicate that, unlike the pre-EMU period, reforms were also introduced by those countries that need them most. However, these correlations are only very coarse evidence and remain mainly illustrative given the small number of countries covered. The following subsection carries out proper econometric analysis to analyse the impact of reforms on employment and participation.

6.2 Estimating the impact of labour market reforms on employment and participation

The effect of labour market reforms enacted during the EMU can be estimated using the recent LABREF database²¹. An important component of the reform activity undertaken over the last years in the Euro-area aimed at improving the labour markets utilisation of those groups with low participation rates (i.e. women, older workers, and the low-skilled). By easing the labour market access for groups with low labour market attachment, these reforms may have contributed to the positive developments in the employment and participation rates. The higher flexibility at the margin of the labour market may also have increased the cyclical fluctuations of employment and participation.

²⁰ Differences in the overall employment rates at the beginning of the stage 3 account for 45% of all pension reforms enhancing the incentives to work introduced after 1999, suggestive of policy makers' effort to increase the employment rate of future older workers.

²¹ LABREF is an inventory of reforms conceived as a tool to provide comprehensive description of qualitative features of the reform process, including the design of enacted reforms, their scope and durability. It focuses on selected characteristics of enacted measures and provides information on their expected implementation phase. The measures reported refer to information on enacted legislation, as well as other public acts of general scope (such as decisions of public authorities or court decisions), including measures that entail changes in the regulatory environment or implementation framework of previously adopted reform. The database can be freely accessed at: http://europa.eu.int/comm/economy_finance/indicators/labref_en.htm. For a description of LABREF see *European Economy Research Letter* Vol. 1, issue 3 November 2007.

LABREF provides a chronology of reforms that can be used to differentiate between countries that did or did not a reform and assess their effects. Each policy intervention is considered as a discrete event occurred at a specific point in time for each country. The difference in outcomes after a certain reform has taken place is compared to the changes in outcomes in countries that did not enact any of these reforms. This treatment -control comparison- identifies the effect of reforms under the assumption that the employment rate would have otherwise followed a similar path in reforming and non-reforming countries.

The focus of the empirical analysis is on a subset of measures contributing to improving the employment of disadvantaged groups (i.e. women, older workers, and the low-skilled). These reforms cover changes in the regulatory framework or the fiscal incentives for temporary and part-time work, targeted tax cuts for the low-skilled/low-income workers, use of employment subsidies and direct job creation schemes and the introduction of in-work-benefits. The effect on the employment rate of reforms for marginally attached people is estimated with the following equation.

$$\Delta n_{i,t} = \alpha_i + \beta reforms_{i,t-1} + \mu \Delta gdp_{i,t-1} + \delta \Delta gdp_{i,t-1} * reforms_{i,t-2} + \varepsilon_{i,t}$$

with $n_{i,t}$ employment rate; $gdp_{i,t}$ gross domestic product; α_i country specific fixed effect; $reforms_{i,t} = 1$ if a certain reform in the above mentioned fields is observed in country i at time t ; 0 otherwise. This formulation allows testing whether employment and its cyclical response change after the reforms. β and δ capture the differential effect of reforms on respectively the employment rate and its cyclical response. If $\beta \neq 0$, reforms influence the average employment rate. If $\delta \neq 0$, reform changes also its response over the cycle. The equation is estimated with OLS regression with country fixed effects controlling for country specific heteroskedasticity and contemporaneous correlation. To capture the lagged effect of reforms the reform dummy is introduced with a one-year lag (and a 2-years lag when interacted with the business cycle to avoid multi-collinearity problems).

This equation is estimated respectively for the total, female and male employment and participation rates both for the full sample of EU25 and EMU countries over the period 2001-2006 (tables 3 a, b and c). As expected, the change in the employment rate increases with GDP growth. The response of employment to GDP, especially for men, is higher for countries outside the EMU than for those inside, which is consistent with the euro-area countries having relatively more rigid labour markets and with an employment legislation benefiting mainly to

the male breadwinner. According to the estimates in tables 3 a, b and c, countries that have made an effort to activate groups at the margin of the labour market have enjoyed better employment rate changes. Compared to non-EMU group, the "gain" from reforms is about twice as much for the members of EMU, predominantly but not exclusively for men.

The interaction of the reform dummy with the GDP growth reveals that reforms that have improved the level of employment have also promoted its adjustment to shocks. Especially in the EMU countries this finding is reflected in the higher elasticity of female employment. The same approach is next used to assess if reforms for groups at the margin of the labour market have effectively modified the pattern of the participation rates (tables 4 a, b and c). Various specifications for the participation rate equation for the EMU and non-EMU countries confirm that these reforms have been paying out more in the EMU than in non-EMU countries.

To buttress the robustness of these results, the effect of reforms for marginally attached groups has been verified on sectoral data from the KLEMS database on a sample covering EU25 countries and 38 sectors (20 industries of manufacturing, 16 of services, construction, electricity and water supply). Different specifications confirm that reforms targeted to disadvantaged groups (i.e. women, low-skilled and low-income groups) have been paying off in EMU countries (Tables 5 a, b and c). According to these estimates, the effect of reforms on employment growth is positive and statistically significant and, surprisingly, mainly driven by the change of employment in manufacturing (see table 5 b). This difference between manufacturing and services may be related to the employment protection legislation being effectively more binding in manufacturing, a finding consistent with the evidence that regulations are more constraining in industries that require a higher level of reallocation (Micco and Pages, 2004)²². Thus, reforms activating groups of people at the margin of the labour market gave firms for which employment protection is more binding the opportunity to build up a "buffer stock" of flexible and relatively low paid workers.²³ In services, where the demand for adjustment is lower because more sheltered from international competition, the

²² A. Micco and C. Pagés (2004), "Employment Protection and Gross Job Flows: A Differences-in-Differences Approach", IADB, WP 508.

²³ These results are also consistent with the so-called *honeymoon effect* of two-tier labour market reforms, whereby a partial liberalisation was accompanied by a temporary over-manning and decline in productivity followed by a gradual decline in employment as the incumbents retire T.Boeri and P. Garibaldi (2007), "Two tier reforms of employment protection: a honeymoon effect?", *Economic Journal*, 117, F357-F358 . Using a panel of 1300 firms between 1995 and 2000, the authors find a sizeable negative effect of temporary contracts on changes in productivity at the firm level.

improved labour market opportunities for marginally attached groups may have led to substitute temporary with permanent workers. Finally, contrary to the non-EMU sample, reforms for marginally attached implied for the emu group an increase in the cyclical response of employment growth in services and a decline in manufacturing. This finding is suggestive of a differentiated impact of these reforms on employment fluctuations, depending on the extent of relocation required by shocks and the degree of market rigidity.

7. CONCLUSION

Amongst both policy makers and academics, there is a growing consensus that labour market institutions need to be adapted to the changing structure of markets and to the accelerating rate of technological progress. Because of the complexity of labour market problems, a one-size-fits-all approach is unrealistic and irrelevant. Nevertheless, the selective review of the literature in this paper shows that some elements are common to most of the successful reform strategies.

There are a number of key messages for policy makers. The endogenous nature of labour market institutions highlighted by the literature has three consequences. First of all, labour market institutions cannot on their own be considered as a hindrance to the flexible working of the labour market, given their evolving nature. Indeed, their impact and the balance of their costs and benefits may change over time: an institution is created to tackle a specific problem which exists at a given point in time but may cease to exist thereafter. In short, a good institution may turn bad - becoming not only useless but also counterproductive - when historical circumstances change. Second, institutions cannot be assessed from a purely economic standpoint, as they not only affect economic efficiency but also often serve equity or redistributive purposes. They cannot be understood without paying due attention to their redistributive and welfare effects. For instance, EPL is more than a mere economic rigidity. It is also an unemployment insurance scheme and should be analysed in a broader context with proper consideration of the unemployment benefit systems. The redistributive role of institutions also means that their political economy dimension (i.e. their support in civil society, public opinion and the political class) should not be underestimated when reforms are being considered. Third, given the endogeneity of institutions and the need to take into account the interactions that they generate amongst themselves and with macroeconomic shocks, the literature underlines the crucial role of policy design (e.g. exploiting positive

interactions, setting up efficient implementing institutions and targeting) in ensuring the efficiency of labour market institutions. Attention should be paid to both the macroeconomic and microeconomic design of institutions.

The literature has also drawn the lessons of the economic history of the last decades. Over recent years, several EU countries have started to change their labour market institutions in a partial way, often introducing reforms that only involved specific segments of the workforce. But the experience of the most successful countries suggests that an effective reform requires major policy shifts at the macro and micro level. The shifts observed at the macro level occurred in the wage setting mechanism, through a redefinition in rules, norms and nature of contractual arrangements, and in the characteristics of policies designed to protect workers from labour demand shocks (e.g. EPL or unemployment insurance schemes). At the micro level the successful changes to these institutions were generally achieved by ensuring the right combination of measures: unemployment benefits available for a short period of time or decreasing over time coupled with an active role for public employment services (e.g. efficient and individualised job search advice, targeted training programmes, timely information on vacancies and job seekers) and complemented with a range of measures targeted at those unable to find a job (e.g. retraining, literacy courses, traineeships). Policy makers have indeed been increasingly sensitive to the pivotal role of financial and non-financial incentives to work as a means to raise labour supply in Europe.

Expectations that the creation of the euro area and the participation in the third stage of EMU would prompt radical labour market reforms have not materialised. Nonetheless, the reforms enacted within the euro area aimed at increasing labour utilisation, especially of those groups with low participation rates, also called the outsiders (i.e. women, older workers and low-paid/low skilled workers). In addition, the reforms enacted to improve the labour market flexibility focused mainly on the very same outsiders, while only minor policy interventions were geared to the needs of adapting employment regulation for insiders. The chronology of reforms from the LABREF database has been used to verify whether this configuration of reforms has led to a change both in the average employment and participation rates and their response to output variation. It turns out that action in this area has been paying off in terms of both average rates and their response to shocks. However, these improvements have often occurred at the costs of an increased duality of the labour market.

References

Acemoglu, K.D. (2001) Good Jobs Versus Bad Jobs”, *Journal of Labor Economics*, Vol.19, pp.1-22.

Acemoglu, K. D. (2005) Institution as the Fundamental Cause of Long-Run Growth, in Aghion, P. and Durlauf, S. (eds) *Handbook of Economic Growth*. North-Holland: Elsevier.

Acemoglu, K. D. and Shimer, R. (1999) Efficient Unemployment insurance, *Journal of Political Economy*, Vol.107, pp.893-928.

Acemoglu, K. D. and Shimer, R. (2000) Productivity gains from unemployment insurance, *European Economic Review*, Vol. 44, pp. 1195-1224.

Agell, J (2002) On the Determinants of labour market institutions: Rent seeking versus social Insurance, *German Economic Review* Vol. 3, Issue 2, pp. 107-135.

Andersen, T. M., Holmström B., Honkapohja S., Korman S.; Söderström H., Vartiainen J. (2007) The Nordic model : embracing globalization and sharing risks. ETLA

Andersen T. M. (2008) Taxes and employment - is there a Scandinavia puzzle? *European Commission Economic Papers* n°359, Brussels.

Arpaia A., Costello D., Mourre G. and Pierini F. (2005) Tracking Labour Market Reforms in the EU Member States: an Overview of reforms in 2004 based on the LABREF database, *ECFIN Economic Paper No. 238*.

Baker, D. Glyn, A., Howell, and D. Schmidt, J. (2004) Labour market institutions and unemployment in D.Howell (ed.) *Questioning liberalisation: Unemployment, Labor markets, and the Welfare State*, OUP.

Bassanini, A. and Duval R. (2006). Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions, *OECD Economics Department Working Papers* 486, OECD Economics Department

Bell, B. Blundell, R. and Van Reenen, J. (1999) Getting the Unemployed Back to Work: The role of targeted Wage subsidies *IFS WP99/12*.

Belot, M. and J.C. Van Ours (2001) Unemployment and labor market institutions: an empirical analysis, *CentER DP no. 50*.

Belot, M. and J.C. Van Ours (2004) Does the recent success of some OECD countries in lowering their unemployment rates lie in the clever design of their labour market reforms?, *Oxford Economic Papers*, Oxford University Press, vol. 56(4), pages 621-642.

Benabou R. (2000) Unequal Societies: Income Distribution and the Social Contract, *American Economic Review*, American Economic Association, vol. 90(1) pages 96-129.

Bertola, G. (2004) A pure theory of Job Security and Labour income Risk *Review of Economic Studies*, Vol. 71, pp 43-61.

- Bertola, G. (2004) Labour Market Institutions in a Changing World forthcoming *Moneda y Credito*.
- Bertola, G. (2004) Distribution, efficiency and labour market regulation in theory, in OECD countries, and in Latin America <http://www.personalweb.unito.it/Giuseppe.Bertola/>.
- Bertola, G., F.D. Blau and L. M. Kahn (2001) Comparative analysis of labour market outcomes: lessons for the US from international long-run evidence *NBER Working Paper* 8526.
- Bertola, G., F.D. Blau and L. M. Kahn (2002) Labour Market Institutions and Demographic Employment Patterns, *CEPR Discussion Papers* 3448.
- Bertola, G. and W. Koeniger (2004) Consumption smoothing and the structure of labor and credit markets, <http://www.personalweb.unito.it/Giuseppe.Bertola/>.
- Blanchard, O.J. (1986) The Wage Price Spiral, *Quarterly Journal of Economics*, (August, 1986), pp. 543-565.
- Blanchard, O.J. (1986) The Wage Price Spiral, *Quarterly Journal of Economics*, (August, 1986), pp. 543-565.
- Blanchard, O.J. (2004) Designing Labour Market Institutions, *mimeo*.
- Blanchard, O.J. (2005) European unemployment: The evolution of Facts and ideas, *MIT WP* 24.
- Blanchard, O.J. and Diamond, P. 1989. The Beveridge curve. *Brookings Papers on Economic Activity* 1, 1–60.
- Blanchard, O.J. and L. Summers (1986) Hysteresis and European Unemployment in Stanley Fischer (ed.), *NBER Macroeconomics Annual*. MIT Press, Sept., 1986, 15-77. Reprinted in R. Cross (ed.), *Unemployment, Hysteresis and the Natural Rate Hypothesis*. Basil Blackwell, 1988, pp. 306-364.
- Blanchard, O.J. and J. Wolfers (2000) The role of shocks and institutions in the rise of European unemployment: the aggregate evidence, *Economic Journal*, Vol. 110, 1-33.
- Blanchard, O.J. and Landier, A. (2002) The Perverse Effects of Partial Labor Market Reform: Fixed Duration Contracts in France, *Economic Journal*, Vol. 112, pp 214-244.
- Blanchard, O.J. and Giavazzi, F. (2003) The Macroeconomic Effects of Regulation and Deregulation in Goods and Labor Markets, *Quarterly Journal of Economics*, Vol. 118 pp 879-90.
- Blanchard, O.J. and Tirole, J (2004) Redesigning the employment protection system, *De Economist*, Vol. 152, pp. 1-20.
- Blank, R. (2002) Can equity and efficiency complement each other? *NBER Working Paper* 8820.

Blank, R. and Freeman, R (1993) Evaluating the connection between social protection and economic flexibility NBER *Working Paper* 4338.

Blau, F. D., and L. M. Kahn (1996) International Differences in Male Wage Inequality: Institutions versus Market Forces, *Journal of Political Economy*, Vol.104, Issue 4, Suppl. pp.791-837.

Blau, F. D. and Kahn L. M. (2000). Gender Differences in Pay, *Journal of Economic Perspective*, American Economic Association, Vol. 14(4) pages 75-99

Blundell, R. (2004) Labour Market policy and Welfare Reform: Meeting distribution and efficiency objectives, *De Economist*, Vol. 152,2 pp233-250.

Boeri, T. (2005) Reforming Labour and Product Markets: Some Lessons from Two Decades of Experiments in Europe, *IMF working Paper/05/97*.

Boeri, T., A. Brugiavini, and L. Calmfors (2001) The role of Unions in the Twenty-First Century, OUP.

Boeri, T, Conde-Ruiz, J.I. and Galasso, V. (2003) Protecting against labour market rise: Employment protection or unemployment benefits?, *CEPR DP 3990*.

Botero, J., S. Djankov, R. La Porta, F. Lopez-de-Silanes, A. Shleifer (2003) The regulation of Labor, NBER *Working Paper* 9756.

Buti, M., Pench, L. and Sestito, P. European unemployment: Contending theories and institutional complexities, *Policy Papers 98/1*, Robert Schuman Centre, Florence: EUI.

Calmfors, L (1993) Centralisation Wage Bargaining and Macroeconomic Performance, *OECD Economic Studies*, 21.

Carone, G. and Salomaki A. (eds) (2005) Indicators and Policies to Make Work Pay. Proceedings of the workshop organised by the European Commission (DG ECFIN), *European Economy*, Special Reports No. 2, 2005. European Commission.

Castanheira, M. and Esfahani, H.S. (2002) Political Economy of Growth: Lessons Learned and challenges Ahead in *Explaining growth: a global research project*, G. McMahan and L. Squire ed, *International Economics Association: Washington, DC*.

Castanheira, M., Galasso, V., Carcillo, S., Nicoletti, G., Perotti, E. and Tsyganok, L., (2004) How to Gain Political Support for Reforms *paper presented at the Sixth European Conference of the Fondazione Rodolfo Debenedetti*.

Cecchi, D. and C. Lucifora (2002) Union density. The economic role of unions and institutions, *Economic Policy*, Vol.35, pp 362-408.

Danthine, J.P. and J. Hunt (1994) Wage bargaining structure, employment and economic integration. *The Economic Journal*, 104 (May), 528-541“.”

Davis, S. J. and J. C. Haltiwanger (1992). Gross job creation, gross job destruction and employment reallocation. *Quarterly Journal of Economics* 107(3): 819-63.

Davis, S. J. and J. C. Haltiwanger (1999a). Gross job flows In Orley Ashenfelter and David Card (eds.), *Handbook of Labor Economics*, Volume 3 (pp. 2711-2805). Amsterdam: Elsevier Science.

Davis, S. J. and J. C. Haltiwanger (1999b). On the Driving Forces Behind Cyclical Movements in Employment and Job Reallocation, *American Economic Review*, 89, no. 5, 1234-1258.

Davis and Henrekson (2000) Wage-Setting Institutions as Industrial Policy, NBER WP 7502.

Decressin J., M. Estevão, P. Gerson and C. Klingen (2001) Job-rich growth in Europe. Chapter 3 in Selected Euro-Area Countries: Rules-Based Fiscal Policy and Job-Rich Growth in France, Germany, Italy and Spain, *Country Report No. 01/203*, IMF.

De Koning, J. and H. Mosley (2001) Labour market policy and unemployment. Impact and Process evaluation in selected European countries, *Edward Elgar*.

Dewatripont, M. and Roland, G. (2005) The Design of Reform Packages under Uncertainty, *American Economic Review* 85(5) 1207-23.

Eichengreen, B. and Iversen, T. (1999) Institutions and economic performance: evidence from the labour market, *Oxford Review of Economic Policy*, Vol. 15 No.4.

Elmeskov, J., J.P. Martin, and S. Scarpetta (1998) Key lessons for Labour Market Reforms: Evidence from OECD Experiences, *Swedish Economic Policy Review*, Vol.5.

Eriksson, T. (1999) Executive compensation and tournament theory: Empirical tests on Danish data, *Journal of Labor Economics* 17(2), 262{80.

Estevão, M. (2005) Product Market Regulation and the Benefits of Wage Moderation, *IMF WP05/191*.

European Commission (2004) Key Determinants of Labour Market Performance in *Employment in Europe* Chapter 2.

Fertig M. and Kluge J. (2004) A conceptual framework for the evaluation of comprehensive labor market policy reforms in Germany, *IZA DP No. 1099*.

Fialová, K. and O. Schneider (2008) Labour Market Institutions and Their Effect on Labour Market Performance in the New EU Member Countries. *CESifo Working Paper Series No. 2421*.

Fitoussi J.P., Jestaz D., Phelps D. and Zoega E.S. (2000) Roots of the Recent Recoveries: Labor Reforms or Private-Sector Forces?, *Brookings Papers on Economic Activity*, Vol. 1, pp. 237-312.

Flanagan, R. (1999) Macroeconomic performance and collective bargaining: an international perspective, *Journal of Economic Literature*, Vol. 37 (September): 1150-1175.

Fredriksson P. and Holmlund B. (2004) Optimal Unemployment Insurance Design: Time Limits, Monitoring, or Workfare?, *CESifo WP No. 1019*.

- Freeman, R. Labour market institutions without blinders: the debate over flexibility and labour market performance, *NBER WP11286*.
- Garibaldi P. and P. Mauro (2002) Employment growth. Accounting for the facts, *Economic Policy*, April. pp. 67-112.
- Gómez Salvador R., Messina J. and Vallanti G. (2004) Gross jobs flows and institutions in Europe, *ECB working paper series*, no.318.
- Gruber, J. (1994) The Consumption smoothing benefit of unemployment insurance NBER *WP4750*.
- Gruber, J, Summers L., and Vergara R. (1992) Taxation and the Structure of Labor Markets: The case of Corporatism, *NBER WP4063*.
- Haikkila A. and H. Piekkola (2005) Explaining the desire for local bargaining: evidence from Finish survey of employers and employees, *Labour*, 19(2): 399-423.
- Hassler, J., Rodríguez Mora J.V., Storesletten K. and Zilibotti F. (2001) Unemployment, Specialization, and Collective Preferences for Social Insurance in Daniel Cohen, Thomas Piketty and Saint-Paul G. (eds) *The New Economics of Rising Inequalities*, pp. 331-50, OUP, 2001.
- Hibbs, D. A. and H. Locking, (2000) Wage dispersion and productive efficiency: Evidence for Sweden, *Journal of Labor Economics* 18(4), 755-82.
- Houmann, F. Gaard, S. and Bagge Thorball, A. K. (2005) Evaluating labour market reforms in Europe in the 1990s in Carone, G. and Salomaki, A. (eds.) *Indicators and Policies to make work pay*, Proceeding of the workshop organised by the European Commission (DG ECFIN)
- Immervoll, H., Levy, H., Lietz, C., Mantovani, M., O'Donoghue, C., Sutherland, H. and Verbist, G. (2005) Household Incomes and Redistribution in the European Union: Quantifying the Equalising Properties of Taxes and Benefits. *IZA DP 1824*.
- Jensen, P., Rosholm M. and Svarer M., (2003) The Response of Youth Unemployment to Benefits, Incentives, and Sanctions, *European Journal of Political Economy* 19, 301-316.
- Jimeno, J. and Rodríguez-Palenzuela D. (2003) Youth Unemployment in the OECD: Demographic Shifts, Labour market Institutions, and Macroeconomic Shocks *ENEPRI Working Paper 19*.
- Kahn, L. M. (2000) Wage Inequality, collective bargaining, and relative employment from 1985 to 1994 *The Review of Economics and Statistics*, Vol. 82, Issue 4, pp. 546-579.
- Katz H.C. (1993) The decentralization of collective bargaining: a literature review and comparative analysis, *Industrial and Labour Relations Review*, 47(1): 3-22.
- Lallemand, T., R. Plasman and F. Rycx (2007) Wage Structure and Firm Productivity in Belgium, *NBER. Working Paper 12978*, National Bureau of Economic Research.

Layard, R. and Nickell, S.J. (1999) 'Labour Market. Institutions and Economic Performance', in O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Amsterdam North-Holland, Vol. 3E, pp 3029-3084.

Lazear, E. P. (1989) "Pay Equality and Industrial Politics", *Journal of Political Economy*, 97, 561-580.

Lazear, E. P. et Rosen S. (1981) Rank-Order Tournaments as Optimum Labor Contracts, *Journal of Political Economy*, 89, 841-864.

Madsen, P. K. (1999) Denmark: Flexibility, security and labour market success, ILO, *Employment and Training Papers* 53.

Martins P. (2008) Dispersion in Wage Premiums and Firm Performance, *Centre Research, for Globalisation Working Paper* 8, April (forthcoming in *Economics Letters*).

Mortensen D. and Pissarides C. (1999a). Job Reallocation, Employment Fluctuations, and Unemployment," Chapter 18 in John B. Taylor and Michael Woodford (eds.), *Handbook of Macroeconomics* Vol. 1B, 1171-1228, North-Holland, Amsterdam.

Mortensen D. and Pissarides C. (1999b). New Developments in Models of Search in the Labor Market," Chapter 39 in Orley Ashenfelter and David Card (eds.) *Handbook of Labor Economics* Vol. 3B, North-Holland, Amsterdam.

Mortensen D. and Pissarides C. (1999c) Unemployment response to skill-biased technology shocks: the role of labour market policy. *The Economic Journal*, Vol. 109, pp. 242-265.

Mourre G. (2006) Did the pattern of aggregate employment growth change in the euro area in the late 1990s?, *Applied Economics*, 38, 1783-1807, August, Routledge, Warwick. (Available also as *ECB working paper*, no 358, May 2004.)

Nickell, S. J. (1997) Unemployment and labour market rigidities: Europe vs North America, *Journal of Economic Perspective*, Vol. 11(3) pp. 57-74.

Nickell, S. J. (2002) A picture of European Unemployment: Success and Failure, paper prepared for the Jahnsson Foundation-CESifo Conference Unemployment in Europe Reasons and Remedies.

Nickell, S. J. and Van Ours J. C. (2000) The Netherlands and the United Kingdom: a European unemployment miracle?, *Economic Policy*, Vol. 30, pp. 137-175.

Nickell, S. J., Nunziata L., Ochel W. and Quintini G. (2003) The Beveridge Curve, Unemployment and Wages in the OECD from the 1960s to the 1990s. in Aghion, P.; Frydman, R.; Stiglitz, J.; Woodford, M. (eds), *Knowledge, Information and Expectations in Modern Macroeconomics: In Honor of Edmund S. Phelps*, Princeton University Press, 2003.

Nickell, S. J., Nunziata L. and Ochel W. (2005) Unemployment in the OECD since the 1960s. what do we know, *The Economic Journal* Vol. 115 pp 1-27.

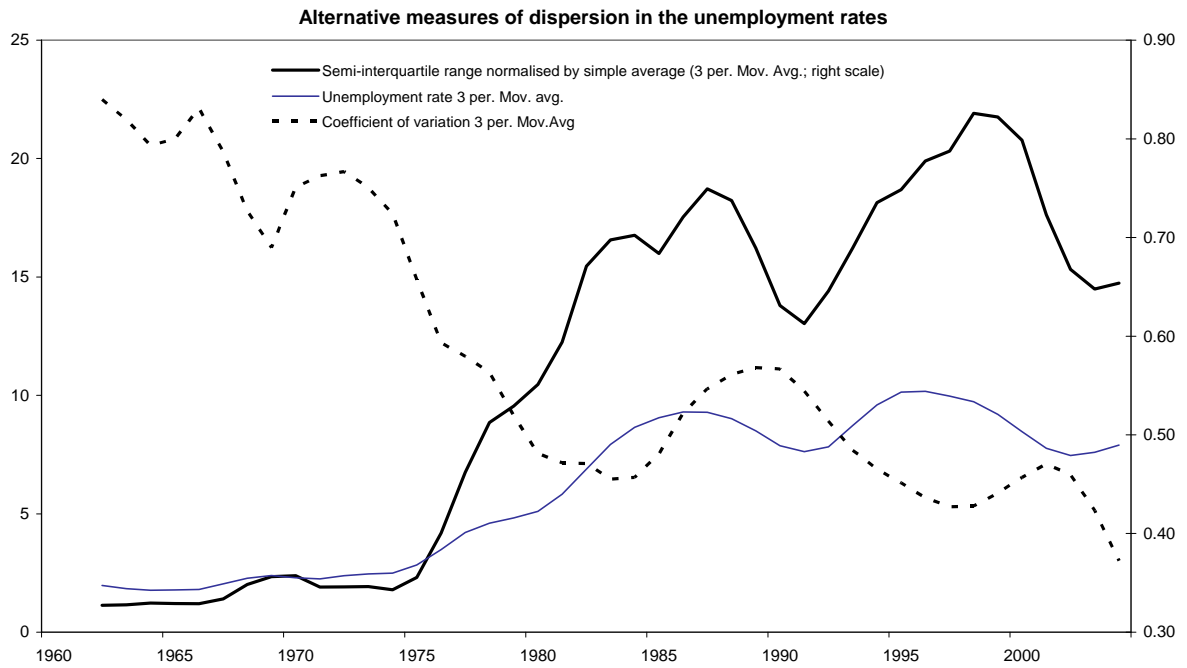
OECD (2003) *Managing Decentralisation: A New Role for Labour Market Policy*. Paris.

OECD (2004) *Employment Outlook*, Paris.

- Pissarides, C., 2000. *Equilibrium Unemployment Theory*, second edition, MIT Press, Cambridge, MA.
- Petrongolo, B. and Pissarides, C. 2001. Looking into the black box: a survey of the matching function. *Journal of Economic Literature* 39, 390–431.
- Schnabel C., S. Zagelmeyer, S. Kohaut (2006): “Collective bargaining structure and its determinants: an empirical analysis with British and German establishment data”, *European Journal of Industrial Relations*, 12(2): 165-188.
- Saint-Paul, G. (2000) "The political economy of labour market institutions", Oxford U. Press.
- Teulings, C.N. and J. Hartog (1998) *Corporatism or competition?: labour contracts, institutions and wage structures in international comparison*. Cambridge: Cambridge University Press, UK. 346 p.
- Traxler F., S. Blascke and B. Kittel (2001) *National labour relations in internationalized market. A comparative study of institutions, change, and performance*, Oxford University Press, 339p.
- Traxler F., S. Blascke and B. Kittel (2003) Bargaining (De)centralization, Macroeconomic Performance and Control over the Employment Relationship, *British Journal of Industrial Relations* 41(1), 2003)
- Van Ours, J.C. (2003) Has the Dutch miracle come to an end?, *CentER DP* no. 32.
- Varian, H.R. (1980) Redistributive taxation as social insurance, *Journal of Public Economics*, Vol. 14, pp. 49-68.
- Wallace H. and Kahn (1982) The determinants of bargaining structure in US manufacturing industries, *Industrial and Labour Relations Review*, 35(2): 181-195.
- Winter-Ebmer, R. and J. Zweimüller (1999) Intra-Firm Wage Dispersion and Firm Performance, *Kyklos*, 52, 555-572.
- Yashiv, E. (2006). Evaluating the performance of the search and matching model. *European Economic Review*, 50:909–936.
- Yashiv, E. (2007). Search and matching in macroeconomics. *European Economic Review*. forthcoming.

ANNEX: FIGURES AND TABLES

Figure 1



Source: Eurostat LFS

Figure 2

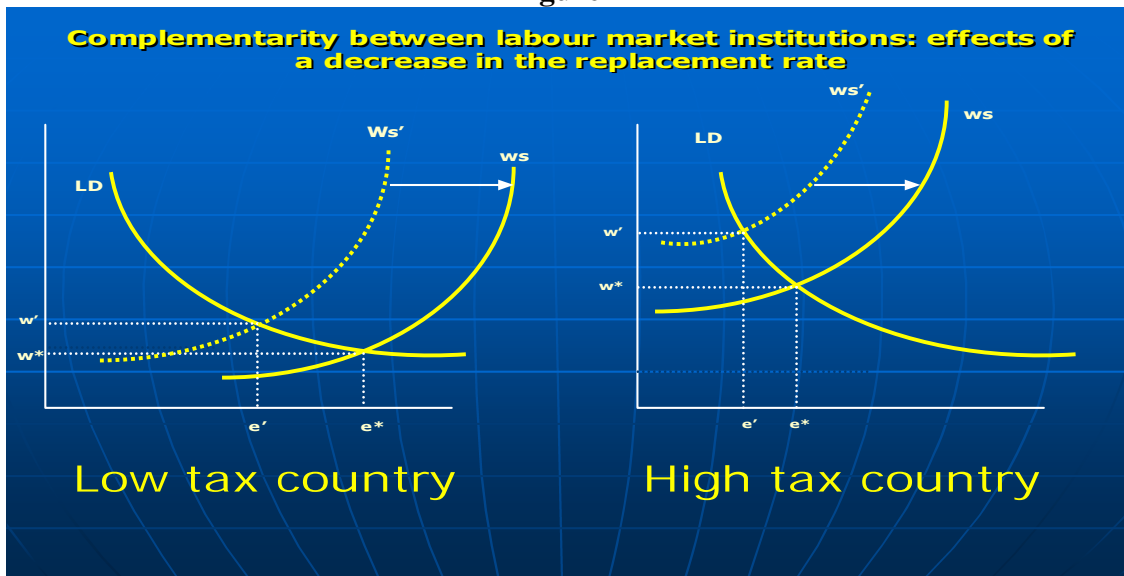
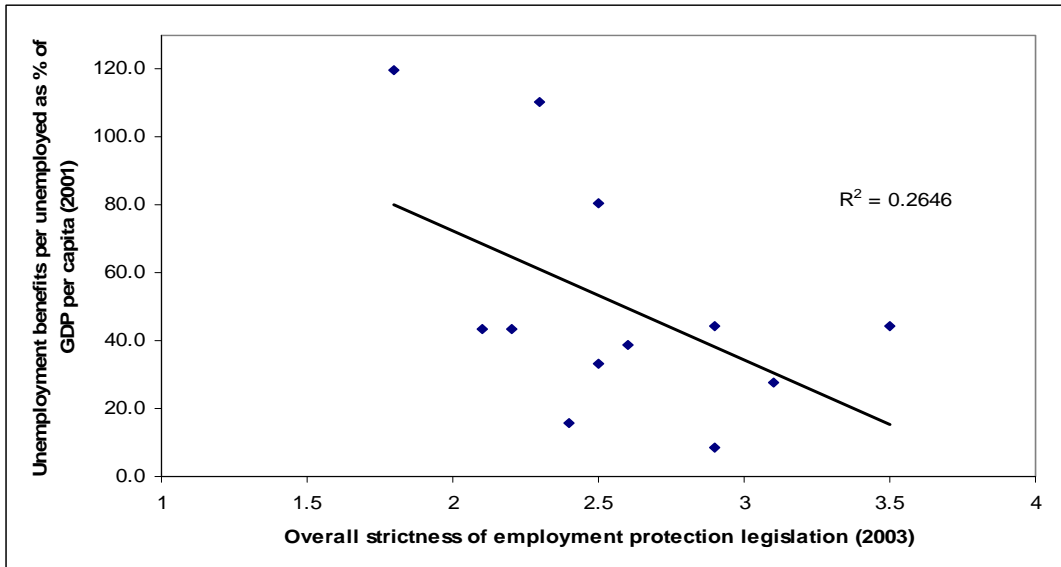
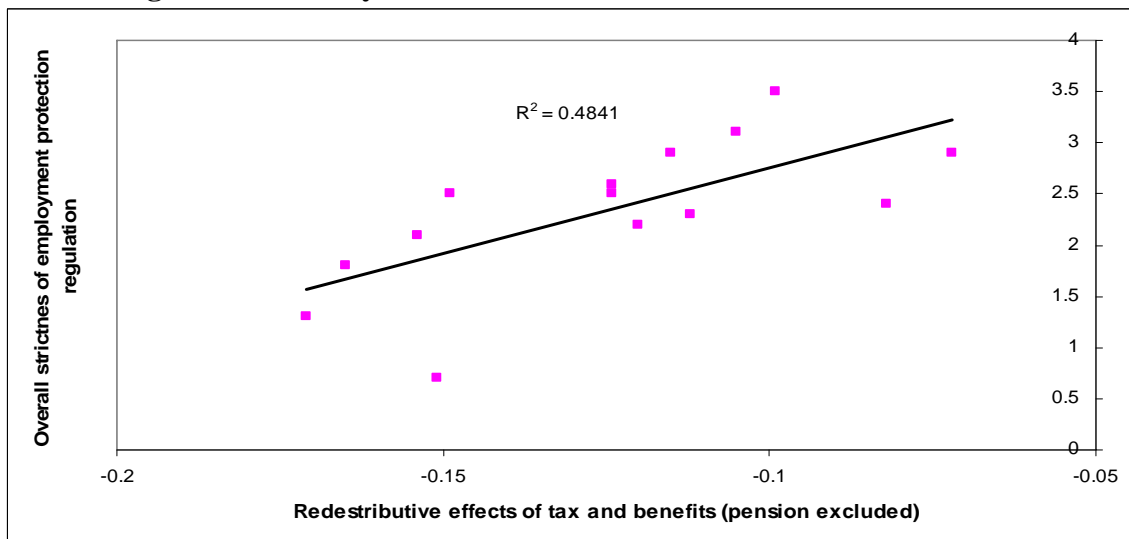


Figure 3: Strictness of EPL index and expenditure on unemployment benefits



Source: Authors' calculation on the OECD Social Expenditure database and Labour Market database. Unemployment benefits are calculated as the expenditure on unemployment benefits per unemployed as percentage of the GDP per capita. Luxembourg excluded due to data availability.

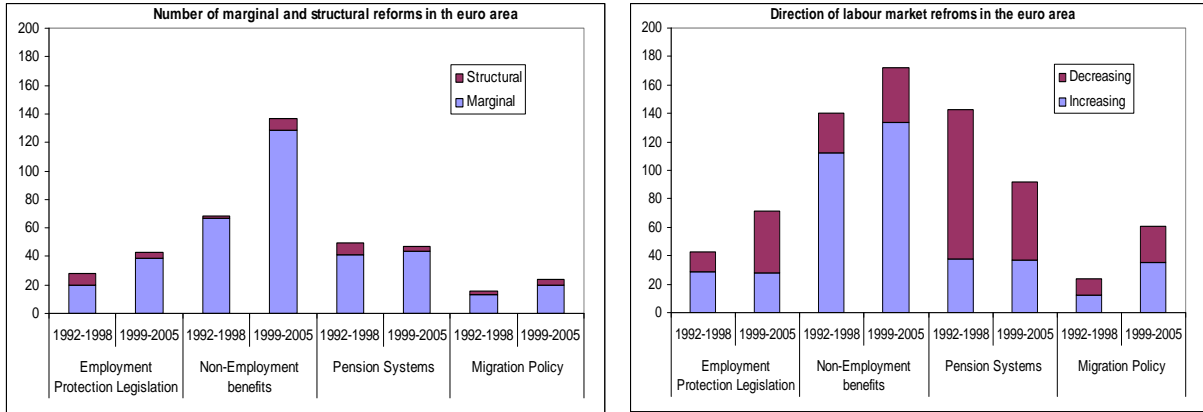
Figure 4 Efficiency of redistributive taxation and strictness of EPL



Note: on the vertical axis overall index of strictness of EPL. The horizontal axis reports the difference between the Gini coefficients of income before and after tax and benefits, excluding pensions: a high absolute value of this difference means that the tax and benefit system alter the income structure toward more equality.

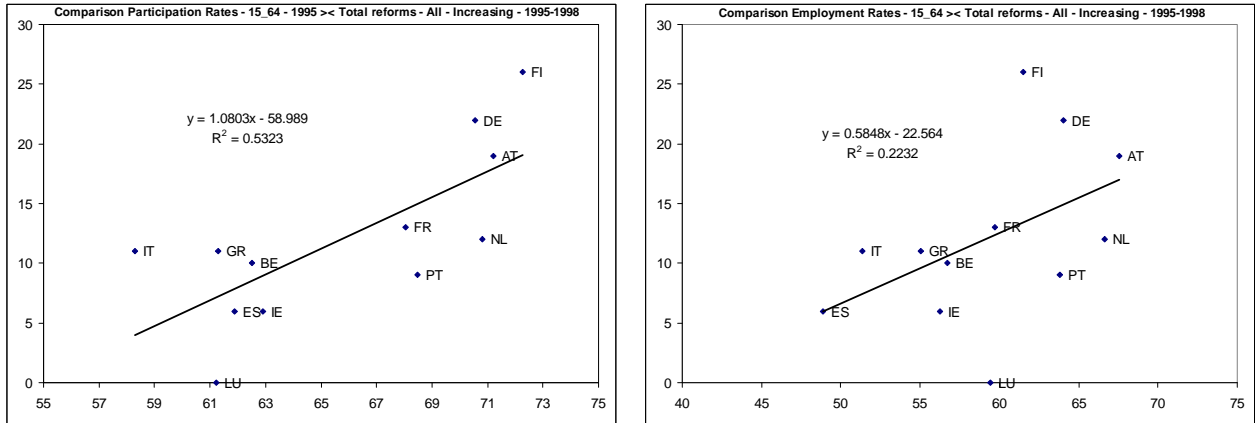
Source: Authors' calculation on OECD and Immervoll et al (2005); Luxembourg is missing due to the lack of data on EPL

Figure 5 - Reforms in the Euro-area: Scope and direction



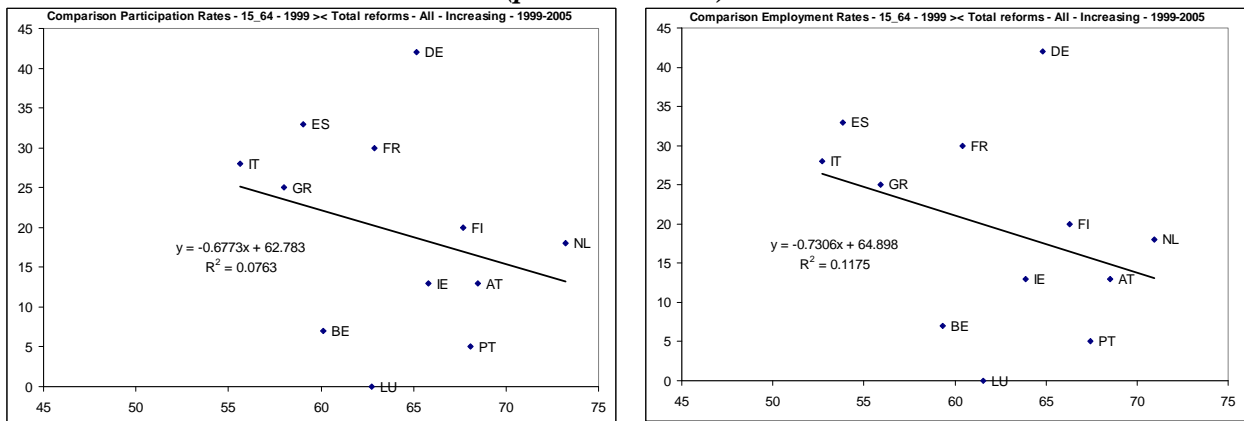
Source: Commission services based on FRDB data base. The left panel shows the distribution of reforms according to whether they are structural or marginal. The right panel shows the distribution of reforms based on whether they increase/decrease labour market flexibility; increase/decrease reward from work; increase/decrease generosity of the pension system; increase/decrease generosity of immigration policies

Figure 6 –Reforms increasing flexibility (1995-1998) and initial conditions (1995) (pre-EMU time)



Source: Commission services based on FRDB and LFS data

Figure 7 - Reforms increasing labour market flexibility and the reward from work (1999-2005) compared with initial employment conditions (1999) (post-EMU time)



Source: Commission services based on FRDB and LFS data.

Table 1 The main results of recent studies

Labour market institutions and Labour market performance																											
Study	Countries and Periods	Institutions considered	Results																								
<i>Aggregate performance</i>																											
Elmeskov et al. (1998)	Static Panel data on 19 OECD countries over the period 1983-1995 (GLS random effects).	Tax wedge (TW) Gross replacement rate (GRR) Spending on ALMPs (ALMPU) EPL Minimum wage (MW) Co-ordination/Centralisation (CO) Union density (UD)	Small positive effects. Positive and significant only in countries with intermediate co-ordination Positive effects, larger in countries that spend more on ALMPs Negative effects if Sweden is excluded Positive effects. Positive and significant only in countries with intermediate co-ordination Insignificant effects Negative effects in high centralised/co-ordinated and decentralised countries Insignificant effects																								
Nickell and Layard (1999)	Cross Section on 20 OECD countries (GLS random effects)	Tax wedge (TW) Gross replacement rate (GRR) Benefits Duration (BD) Spending on ALMPs (ALMPU) EPL Co-ordination (CO) Union density (UD) Union Coverage (UC) Owner Occupation rate	<table border="0"> <tr> <td style="text-align: center;"><i>Effects on total unemployment</i></td> <td style="text-align: center;"><i>Effects on long-term unemployment</i></td> </tr> <tr> <td>Positive effects</td> <td>Positive effects</td> </tr> <tr> <td>Positive effects</td> <td>Insignificant</td> </tr> <tr> <td>Positive effects</td> <td>Positive effects</td> </tr> <tr> <td>Negative effects</td> <td>Negative effects</td> </tr> <tr> <td>Negative effects</td> <td>Insignificant</td> </tr> <tr> <td>Negative effects</td> <td>Negative effects</td> </tr> <tr> <td>Positive effects</td> <td>Insignificant</td> </tr> <tr> <td>Positive effects</td> <td>Positive effects</td> </tr> <tr> <td>Positive effects</td> <td>Insignificant</td> </tr> <tr> <td colspan="2" style="text-align: center;"><i>Effects on employment rate</i></td> </tr> <tr> <td colspan="2" style="text-align: center;">Similar effects. UD, UC, GRR ALMP insignificant</td> </tr> </table>	<i>Effects on total unemployment</i>	<i>Effects on long-term unemployment</i>	Positive effects	Positive effects	Positive effects	Insignificant	Positive effects	Positive effects	Negative effects	Negative effects	Negative effects	Insignificant	Negative effects	Negative effects	Positive effects	Insignificant	Positive effects	Positive effects	Positive effects	Insignificant	<i>Effects on employment rate</i>		Similar effects. UD, UC, GRR ALMP insignificant	
<i>Effects on total unemployment</i>	<i>Effects on long-term unemployment</i>																										
Positive effects	Positive effects																										
Positive effects	Insignificant																										
Positive effects	Positive effects																										
Negative effects	Negative effects																										
Negative effects	Insignificant																										
Negative effects	Negative effects																										
Positive effects	Insignificant																										
Positive effects	Positive effects																										
Positive effects	Insignificant																										
<i>Effects on employment rate</i>																											
Similar effects. UD, UC, GRR ALMP insignificant																											
Blanchard and Wolfers (2000)	Static Panel data on 20 OECD countries over the period 1960-1995. Interactions of time fixed institutions with TFP, real interest rate and labour demand shocks are considered with non-linear least squares	Tax wedge (TW) Gross replacement rate (GRR) Benefits Duration (BD) Spending on ALMPs (ALMP) EPL Minimum wage (MW) Co-ordination/Centralisation Union density (UD) Union Coverage (UC)	Positive effects Positive effects. Among most significant when interacted with shocks Positive effects. Among most significant when interacted with shocks Positive effects Positive effects but weaker when Spain is dropped from sample Positive effects Positive effects. Among most significant when interacted with shocks Positive effects. Among most significant when interacted with shocks Insignificant effects																								
Fitoussi et al. (2000)	Two steps approach. First step: Over the period 1960-1998 for 19 OECD countries, a dynamic panel (fixed effects) estimate of unemployment persistency and sensitivity to macro shocks is obtained. Second step: Cross section of (short- and long-run) fixed effects and sensitivity coefficients to labour market institutions	Macro-variables: world real interest rate, trend labour productivity growth, ratio of non wage support to labour productivity, direct taxes, payroll taxes, inflation rate Labour market institutions: Replacement rate (GRR), benefit duration (BD), union density, (UD) union co-ordination (CO), union coverage (UC), active labour market expenditure (ALMP)	At least 50% of cross country differences in unemployment and in sensitivity to shocks are explained by labour market institutions cross country differences in unemployment are a positive function of GRR, UD, CO and a negative of UC cross country differences in sensitivity of shocks are a positive function of BD, UD and a negative CO and ALMP																								
Nickell et al (2002)	Dynamic Panel data on 20 countries over the period 1961-1995. (GLS estimates)	Tax wedge (TW) Gross replacement rate (GRR) Benefits Duration (BD) EPL Co-ordination (CO) Union density (UD) Owner Occupation rate	<table border="0"> <tr> <td style="text-align: center;"><i>Effects on unemployment rate</i></td> </tr> <tr> <td>Positive effects. Larger in countries with high degree of bargaining co-ordination</td> </tr> <tr> <td>Positive effects. Larger in countries where the duration of unemployment benefits is high</td> </tr> <tr> <td>Positive effects</td> </tr> <tr> <td>Insignificant effects</td> </tr> <tr> <td>Negative effects</td> </tr> <tr> <td>Positive effects, reduced when co-ordination is bargaining is high</td> </tr> <tr> <td>Insignificant effects</td> </tr> <tr> <td style="text-align: center;"><i>Effects on employment rate</i></td> </tr> <tr> <td>Similar effects. Only Benefits duration are insignificant</td> </tr> </table>	<i>Effects on unemployment rate</i>	Positive effects. Larger in countries with high degree of bargaining co-ordination	Positive effects. Larger in countries where the duration of unemployment benefits is high	Positive effects	Insignificant effects	Negative effects	Positive effects, reduced when co-ordination is bargaining is high	Insignificant effects	<i>Effects on employment rate</i>	Similar effects. Only Benefits duration are insignificant														
<i>Effects on unemployment rate</i>																											
Positive effects. Larger in countries with high degree of bargaining co-ordination																											
Positive effects. Larger in countries where the duration of unemployment benefits is high																											
Positive effects																											
Insignificant effects																											
Negative effects																											
Positive effects, reduced when co-ordination is bargaining is high																											
Insignificant effects																											
<i>Effects on employment rate</i>																											
Similar effects. Only Benefits duration are insignificant																											
Belot and Van Ours (2004)	Static Panel data on 17 OECD countries over the period 1960-1999	Tax rate Gross replacement rate (GRR) EPL	<table border="0"> <tr> <td style="text-align: center;"><i>Effects on unemployment rate</i></td> </tr> <tr> <td>Insignificant effects.</td> </tr> <tr> <td>Negative effects. The effect of GRR is larger in countries with a high tax rate</td> </tr> <tr> <td>Insignificant. Effect of the interaction with centralisation ambiguous</td> </tr> </table>	<i>Effects on unemployment rate</i>	Insignificant effects.	Negative effects. The effect of GRR is larger in countries with a high tax rate	Insignificant. Effect of the interaction with centralisation ambiguous																				
<i>Effects on unemployment rate</i>																											
Insignificant effects.																											
Negative effects. The effect of GRR is larger in countries with a high tax rate																											
Insignificant. Effect of the interaction with centralisation ambiguous																											

		Centralization Union density (UD) Union density* Centralization	Insignificant effects Insignificant effects Positive <i>Effects on non-employment rate</i> Similar results	
Gomez-Salvador et al (2004)	Static Panel data, (OLS and Random effects)	EPL Benefit Duration Union Co-ordination Tax wedge Employment subsidies EPL Benefit Duration Union Co-ordination Tax wedge Employment subsidies EPL Benefit Duration Union Co-ordination Tax wedge Employment subsidies	<i>Effect on the Job reallocation rate</i> Negative Negative Negative (OLS) Negative Insignificant <i>Effect on the Job creation rate</i> Negative Negative Negative Negative (OLS) Negative <i>Effect on the Job destruction rate</i> Insignificant Negative (OLS) Negative Insignificant Negative	
Nickell et al (2005)	Dynamic Panel data on 20 countries over the period 1961-1995. (GLS estimates)	Tax wedge (TW) Gross replacement rate (GRR) Benefits Duration (BD) EPL+ Co-ordination (CO) Union density (UD) Δ Union density (UD) Owner Occupation rate	<i>Effects on unemployment rate</i> Positive effects. Larger in countries with high degree of bargaining co-ordination Positive effects. Larger in countries where the duration of unemployment benefits is high Positive effects Insignificant effects Negative effects, stronger in countries where union density is high Insignificant Positive effects Insignificant effects <i>Effects on employment rate</i> Similar effects. Only Benefits duration are insignificant	
Mourre (2006)	Dynamic Panel data (GLS estimates) on 10 euro area countries and 20 OECD countries over the period 1960-1997.	Tax wedge EPL Bargaining Coordination Union density Subsidies to private employment Other ALMPs (Lower) Tax wedge (Lower) EPL (Higher) Part-time employment rate (More) Private employment subsidies Unionisation, Benefit replacement rate, Benefit duration Other ALMPs (public employment services, labour market training and direct job creation in the public sector)	<i>Effect on employment (number of people and rate of employment)</i> Negative Negative (although not very robust) Positive Negative (but low significance) Positive (but low significance) Insignificant <i>Contribution to the positive break in employment pattern in the late 1990s (cross-section)</i> Yes Yes (but less clear) Yes (but less clear) Yes (but less clear) Insignificant Insignificant Insignificant Insignificant	
2. Relative performance				
Kahn (2000)	Static panel data over the period 1985-1994 for 14 OECD countries	Co-ordination Union density (UD) Union Coverage (UC)	<i>Effect on employment rate of middle- relative to low-skilled</i>	
			<i>Men</i>	<i>Women</i>
			Positive Positive Positive	Insignificant Insignificant Insignificant

Bertola Blau Kahn (2002b)	Static Panel data on 17 OECD countries over the period 1960- 1999. (GLS estimates)		<i>Effect on relative employment rate</i>			
			Prime age vs. youth		Prime age vs. older	
			Men	Women	Men	Women
			Tax wedge (TW)	Insignificant	Insignificant	Negative
replacement rate year 1	Insignificant	Negative	Negative	Insignificant		
replacement rate year 5	Insignificant	Insignificant	Negative	Negative		
EPL	Insignificant	Positive	Positive	Insignificant		
Co-ordination (CO)	Positive	Positive	Insignificant	Positive		
Union density (UD)	Negative	Negative	t	Positive		
Union coverage (UC)	Positive	Insignificant	Positive	Positive		
Public pension replac. Rate	Insignificant	Positive	Positive	Positive		
Replac. rate older workers	Insignificant	Positive	Insignificant	Insignificant		
Disabil. Replac. rate	Insignificant	Insignificant	t	Negative		
Female retirement age	Insignificant	Negative	Positive	Insignificant		
Male retirement age	Negative	Insignificant	Insignificant	Insignificant		
Accrual rate 10 yrs age 55	Insignificant	Insignificant	t	Insignificant		
			Negative			
			Negative			
			Positive			
		<i>Effect on the relative unemployment rate</i>				
		Prime age vs. young		Prime age vs. older		
		Men	Women	Men	Women	
Tax wedge (TW)	Insignificant	Insignificant	Insignificant	Negative	Negative	
replacement rate year 1	Insignificant	Insignificant	Insignificant	Negative	Insignificant	
replacement rate year 5	Insignificant	Insignificant	Insignificant	Negative	Insignificant	
EPL	Negative	Negative	Negative	Insignificant	Insignificant	
Co-ordination (CO)	Insignificant	Insignificant	Insignificant	Insignificant	Positive	
Union density (UD)	Positive	Insignificant	Insignificant	Insignificant	Negative	
Union coverage (UC)	Insignificant	Positive	Negative	Insignificant	Insignificant	
Public pension replac. Rate	Positive	Positive	Positive	Positive	Positive	
Replac. rate older workers	Insignificant	Insignificant	Negative	Insignificant	Insignificant	
Disabil. Replac. rate	Negative	Insignificant	Negative	Negative	Negative	
Female retirement age	Positive	Positive	Insignificant	Insignificant	Insignificant	
Male retirement age	Insignificant	Insignificant	Positive	Positive	Insignificant	
Accrual rate 10 yrs age 55	Insignificant	Positive	Negative	Negative	Negative	
		<i>Effect on the relative unemployment rate</i>				
		Young		Prime age Men	Young -Prime age	
		Men	Women		M W	
Tax wedge (TW)	Positive	Positive	Positive	Positive	Pos	Pos
Gross replacement rate (GRR)	Positive	Insignificant	Insignificant	Positive	Ins	Neg
Benefits Duration (BD)	Positive	Insignificant	Insignificant	Positive	Ins	Neg
Spending on ALMPs (ALMP)	Insignificant	Insignificant	Positive	Negative	Ins	Neg
EPL	Insignificant	Positive	Positive	Insignificant	Pos	Pos
Strictness of temporary contracts	Insignificant	Positive	Positive	Positive	Ins	Pos
Relative Minimum wage (MW)	Negative	Negative	Negative	Insignificant	Pos	Neg
Co-ordination/Centralisation	Negative	Negative	Negative	Negative	Neg	Pos
Union density (UD)	Positive	Negative	Negative	Insignificant	Pos	Neg
Union Coverage (UC)	Insignificant	Positive	Positive	Positive	Ins	Pos

Table 2: Contribution of temporary and permanent jobs to cumulated employment growth ("Diffs-in-Diffs" approach)

	1991-1998	1999-2006
Temporary Employment		
EMU	4.07	3.27
Non-EMU (DK, SE, UK)	2.93	-0.37
z-test: same mean changes	5.72***	26.19***
Permanent Employment		
EMU	4.72	7.21
Non-EMU (DK, SE, UK)	10.8	5.44
z-test: same mean changes	-12.2***	6.42***

Source: Authors' calculations on LFS; non-EMU includes Denmark Sweden and the UK. Columns (1) and (2) report for the EMU and non-EMU countries the contribution of temporary and permanent contracts to total employment growth. The z-test measures whether the cumulated employment growth in the EMU significantly differs from that in the non-EMU countries. The test clearly rejects the null hypothesis of similarity of the contribution of temporary and permanent jobs to total employment growth between the EMU and non-EMU countries. The sum of the contributions of temporary and permanent employment for respectively EMU and non-EMU group gives the cumulated employment growth over each sub-period based on LFS. This can differ from the growth rate based on National Accounts.

Table 3a: Effect of reforms Total employment rate average and cyclical response

Dependent variable: Change in Total Employment rate	All countries	EMU countries	Non-EMU countries
Reforms dummy (-1)	0.31*** (5.57)	0.64*** (2.66)	0.24*** (7.27)
GDP growth (-1)	0.15*** (4.91)	0.11** (1.96)	0.15*** (4.30)
GDP growth (-1)*Reforms dummy (-2)	0.03** (1.97)	0.06 (1.20)	0.009 (0.56)
Country Fixed effects	Yes	Yes	Yes
Observations	150	72	78
R-squared (adjusted)	0.42	0.33	0.48

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The "All countries" sample includes all EU25 countries. Estimation period: 2001-2006.

Table 3b: Effect of reforms Female employment rate average and cyclical response

Dependent variable: Change in Female Employment rate	All countries	EMU countries	Non-EMU countries
Reforms dummy (-1)	0.43*** (6.19)	0.46*** (2.04)	0.23*** (3.86)
GDP growth (-1)	0.08*** (4.20)	0.07 (1.50)	0.12*** (2.98)
GDP growth (-1) * Reforms dummy (-2)	0.04** (3.78)	0.11** (2.18)	0.025 (1.28)
Country dummies	Yes	Yes	Yes
Observations	150	72	78
R-squared (adjusted)	0.51	0.40	0.27

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The "All countries" sample includes all EU25 countries. Estimation period: 2001-2006.

Table 3c: Effect of reforms Male employment rate average and cyclical response

Dependent variable: Change in Male Employment rate	All countries	EMU countries	Non-EMU countries
Reforms dummy (-1)	0.34** (2.29)	0.77*** (2.62)	0.12 (0.72)
GDP growth (-1)	0.22*** (7.96)	0.10*** (2.07)	0.29*** (7.56)
GDP growth (-1) * Reforms dummy (-2)	0.02 (0.66)	0.001 (0.02)	0.02 (0.02)
Country dummies	Yes	Yes	Yes
Observations	150	72	78
R-squared (adjusted)	0.27	0.21	0.36

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The "All countries" sample includes all EU25 countries. Estimation period: 2001-2006

Table 4a: Effect of reforms Total participation rate average and cyclical response

Dependent variable: Change in Total Employment rate	All countries	EMU countries	Non-EMU countries
Reforms dummy (-1)	0.17** (1.93)	0.41*** (5.01)	0.014 (0.12)
GDP growth (-1)	0.06* (2.36)	-0.02 (-0.74)	0.13 (4.72)
GDP growth (-1) * Reforms dummy (-2)	0.04* (1.65)	0.10** (2.12)	-0.007 (-0.40)
Country dummies	Yes	Yes	Yes
Observations	150	72	78
R-squared (adjusted)	0.27	0.19	0.29

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The "All countries" sample includes all EU25 countries. Estimation period: 2001-2006

Table 4b: Effect of reforms Female participation rate average and cyclical response

Dependent variable: Change in Female Employment rate	All countries	EMU countries	Non-EMU countries
Reforms dummy (-1)	0.06 (1.20)	0.29*** (4.41)	-0.06 (-0.61)
GDP growth (-1)	-0.002 (-0.12)	-0.03 (-1.10)	0.06 (1.33)
GDP growth (-1) * Reforms dummy (-2)	0.07** (5.45)	0.16** (2.93)	0.02 (1.04)
Country dummies	Yes	Yes	Yes
Observations	150	72	78
R-squared (adjusted)	0.40	0.19	0.27

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The sample includes all EU25 countries; Estimation period: 2001-2006

Table 4c: Effect of reforms Male participation rate average and cyclical response

Dependent variable: Change in Male Employment rate	All countries	EMU countries	Non-EMU countries
Reforms dummy (-1)	-0.05 (-0.57)	-0.13 (-0.99)	-0.0013 (-0.03)
GDP growth (-1)	-0.03*** (-2.58)	-0.02 (-0.66)	-0.06*** (-4.05)
GDP growth (-1) * Reforms dummy (-2)	0.01 (0.63)	-0.02 (-0.40)	0.024 (1.11)
Country dummies	Yes	Yes	
Observations	150	72	78
R-squared (adjusted)	0.06	0.02	0.12

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The sample includes all EU25 countries; Estimation period: 2001-2006

**Table 5a: Effect of reforms on the growth of Employees
(average and cyclical response): Total Economy**

Dependent variable: total employment growth	All countries	EMU Countries	Non-EMU countries
Reforms dummy (-1)	0.18 (1.08)	0.44** (2.06)	0.01 (0.06)
Value Added growth (-1)	0.08*** (15.85)	0.10*** (7.49)	0.08*** (16.4)
Value Added growth (-1) * Reforms dummy (-2)	0.017*** (3.06)	-0.01 (-0.07)	0.033 (2.14)
Country–Industry fixed effect	Yes	Yes	Yes
Observations	4699	2250	2449
R-squared (adjusted)	0.54	0.54	0.56

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The sample includes all EU25 countries. Estimation period: 2000-2004

**Table 5b: Effect of reforms on the growth of Employees
(average and cyclical response): Manufacturing**

Dependent variable: employment growth in manufacturing	All countries	EMU Countries	Non-EMU countries
Reforms dummy (-1)	0.25 (1.19)	0.60** (2.3)	-0.01 (-0.049)
Value Added growth (-1)	0.04*** (6.88)	0.09 (6.91)	0.04*** (4.76)
Value Added growth (-1) * Reforms dummy (-2)	0.05*** (8.41)	-0.05** (-2.07)	0.13*** (6.75)
Country–Industry fixed effect	Yes	Yes	Yes
Observations	2079	990	1089
R-squared (adjusted)	0.40	0.30	0.48

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The sample includes all EU25 countries. Estimation period: 2000-2004

Table 5c: Effect of reforms on the growth of the Employees (average and cyclical response): Services

Dependent variable: employment growth in services	All countries	EMU Countries	Non-EMU countries
Reforms dummy (-1)	0.18 (1.26)	0.14 (0.86)	0.23 (1.56)
Value Added growth (-1)	0.12*** (16.25)	0.08*** (4.40)	0.13*** (14.3)
Value Added growth (-1) * Reforms dummy (-2)	-0.03 (-1.49)	0.12*** (3.74)	-0.10*** (-8.59)
Country–Industry fixed effect	Yes	Yes	Yes
Observations	2620	1260	1360
R-squared (adjusted)	0.59	0.63	0.57

OLS regression controlling for country specific heteroskedasticity and contemporaneous correlation. Absolute values of T-statistics in parentheses; *significant at 10%; ** significant at 5%; *** significant at 1%. The sample includes all EU25 countries. Estimation period: 2000-2004