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When Eastern Labour Markets
Enter Western Europe.
CEECs Labour Market Institutions
upon Euro Zone Accession

Joanna Tyrowicz

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Joanna Tyrowicz – National Bank of Poland and Faculty of Economics, University of Warsaw.

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Abstract

This paper reviews the literature on the labour market institutions in European Union Member States in the context of monetary integration. Traditionally, labour markets are a key concept in the optimal currency area theory, playing the role of the only accommodation mechanism of asymmetric shocks after the monetary unification. There are several theoretical frameworks linking the institutional design of the labour market to the potential effectiveness of monetary policy in the context of currency areas. Many empirical studies addressed these issues too, yielding important policy implications for labour market reforms in the process of monetary unification. However, there seem to be "white spots" in this patchwork, which may actually be particularly useful from the perspective of CEECs upon the accession to the euro zone. We suggest these research directions encompassing labour supply and theoretical frameworks of labour market flexibility benchmarking in the context of monetary integration.

Key words: labour market institutions, monetary integration, labour market reform, CEECs, EMU

1 Introduction

In principle, current state-of-the-art literature on optimal currency areas and monetary integration may be divided into two strands: those, who ask the question of optimality *ex ante*, and those who pose it *ex post*. The former focuses on what are the necessary preconditions for a currency area to be optimal (*i.e.* among others, welfare enhancing), while labour mobility or labour markets flexibility are the key channels through which adjustments may occur subsequent to the common currency introduction. In the latter strand of the literature, optimality is considered endogenous with main focus on possible transition upon unioisation. Essentially, following the product and factors markets integration, these analyses hypothesise about the optimal policy choices taking into account the interplay of national fiscal and economic policies with the common central bank monetary decisions. Taking this view, the evolution of labour market institutions affects the decision set for the central bank as well as equilibrium wage and unemployment levels. From an empirical point of view, studies of the linkages between labour market institutions and monetary integration range from fairly traditional cross-country panel analysis (including impact on economic performance and stability of main macroeconomic indicators like inflation and output growth rate), economic geography and spatial analyses to calibrated simulations.

The purpose of this paper is to review and analyse theoretical frameworks and empirical findings with the main motivation of suggesting possible future research directions allowing to fully disentangle the relationships between labour market institutions and monetary policy before and after accession to a currency union. Many of the empirical analyses point to some policy implications as well, thus organising and prioritising these recommendations for labour market reforms. Some of the most recent conclusions are in nature actually quite heterodox - or, at the very least, oppose the traditional intuitions. When placed in a coherent theoretical framework they indeed point to some important directions of policies modification, but these resulting priorities are hardly standard calls for the utopia of perfectly competitive labour markets.

This review attempts to answer the some highly policy-relevant questions. Firstly, what elements of the institutional labour markets design determine main macroeconomic indicators of labour supply, output and inflation. Interestingly, majority of the studies focused on variables of interest to optimal currency area literature, *i.e.* central bank decision making, output and prices stabilisation as well as supranational coordination under the emergence of EU wide arenas for labour market reform negotiations. On the other hand, an impressively large stock of literature analyses labour market institutions *per se*, evaluating efficiency and effectiveness. Here, major areas of interest were the impact of wage bargaining scheme on nominal wages rigidity along with the labour market-related regulations, the role of active labour market policies in reducing unemployment as well as the taxes and social transfer systems (including tax wedge and minimal wage regulations). In addition, literature emphasises possible forward linkages from product markets integration to labour markets consequences. Finally, learning from the experience of Euro Zone countries, one might want to inquire their paths of labour market reform on the way to accession and the eventual payoff from these efforts. Some of these studies are especially useful in suggesting priority areas of the potentially vital institutional changes.

The analysis in this paper comprehends a political economy approach as well. Theoretical contributions in these domains may seem naive as far as the assumptions side is concerned. However, in many cases these - perhaps oversimplifying - assumptions are not drivers of the results, while conclusions seem indeed to be in line with the evolutions we observe nowadays. Naturally, there are stark differences between Euro zone countries concerning the context of institutional changes. Consequently, this paper comprises the analysis of how the situation in some of the EU societies has evolved either prior to the reforms or subsequently. Cross-national econometric studies refer either to the levels or to the dynamics, while country-specific effects are usually put in the black box of the unobserved heterogeneity. In the view of this paper motivations, adequate choice of countries and respective case studies may indeed shed more light on the reform prospects as well as provide some grounds for the expectations in as far as the magnitude of their consequences is concerned.

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The paper is structured as follows. Section 2 suggests a possibly comprehensive theoretical background allowing to interpret both the empirical countries and case-by-case evolutions. An effort was taken to provide some structure into the theoretical developments, suggesting also which areas requiring perhaps more elaboration to fit the conditions of a New Member State - like Poland - prior to EMU accession. Subsequently, in Section 3 we present empirical findings corroborating or undermining these foundations. The main shortcoming for most of these studies is that they either comprise Western European countries (for the reasons of data availability) or focus on simulation exercises, which may be of only limited applicability to CEECs. Section 4 concludes with some policy implications.

2 Theoretical underpinnings

Labour market institutions are indeed at the core of interest in most of the recent studies analysing the impact of monetary integration on the real side of EMU economies. A very important distinction has to be made. There are two separate dimension of this analysis: (i) the effect on the flexibility of nominal wages in the case of macroeconomic shocks, and thus on the cyclical sensitivity of employment and output; and (ii) the effect on equilibrium real wages, and thus on equilibrium unemployment, or more loosely on the average levels of real wages and unemployment over the business cycle. On the other hand, monetary union can have two types of effects: direct (by altering incentives for all agents within the existing institutions) or indirect (by altering institutions).

Equilibrium unemployment is most frequently defined in the literature as the average rate of unemployment around which cyclical fluctuations occur. It is widely believed that in the case of Europe in general, origins of this rate are largely structural. Naturally, in this area labour market reform (change of labour market institutions) is especially important. Which institutions? Reduction of the level and duration of unemployment benefits, more effective active labour market policies, substitution of individual for collective wage agreements, lower minimum wages for "difficult" group, changes in the legal framework for wage setting with the aim of increasing relative bargaining strength of employers (like restrictions on the right to strike) as well as possibly also reductions in employment protection and taxes.

For the flexibility of the nominal wages, literature typically acknowledges that labour market institutions assumed to support real wage hikes and downward real wage rigidity comprise the degree of centralisation as well as the cooperation and coordination in the wage bargaining process. Frequently, attention is also drawn to rigidities on the the side of the employers by looking employment protection legislation defining actual costs of hiring and firing employees. Alternatively, the side of the employees can be inquired, by recognising the incentives created by the level and the duration of the unemployment benefits as well as the ability to improve ones situation on the labour market (*e.g.* active labour market policies coverage, discriminative regulations, openness to foreign workers, etc.).

Summarising, it seems that regardless of the channel, prayers are raised against the same elements of the labour markets institutional design. Intuitively, each of them can be justified. However, when one takes a rigorous theoretical perspective and considers EMU at large instead of single-country framework, conclusions become less intuitive. Firstly, it has been the "conventional wisdom" that labour market reform is the necessary prerequisite for EMU experiment to prove successful. The so called TINA argument (There Is No Alternative) was raised, stating that when monetary policy is not autonomous and currency policy is no longer possible, fiscal instruments and labour market instruments are the only ones that can be used for shock absorption. Since fiscal discipline imposed by Stability and Growth Pact (SGP) deprives governments from the ability to borrow in an imprudent manner, labour markets role in shock absorption grows even further. In principle, policy recommendations derived from this argument point to more reform among all Member States, including prospective participants.

The problem with this argument is that it explains why EMU could lead to more nominal wage flexibility in order to reduce cyclical variability, but not why the political incentives to reduce equilibrium unemployment would increase. TINA will not work *per se*, if we believe - as is the current orthodoxy - that money is neutral in the longer run, so monetary policy should have no impact whatsoever on real phenomena, like for example employment. This is the main motivation for political economy models with the choice of reform level.

The same doubt can be raised when reverse direction of causality is concerned. Namely, as was already stated, one school of researchers focus on optimality of a currency area *ex ante*, while the latter approaches the problem of *ex post* synchronisation. The latter is equivalent to the TINA argument already criticised above. If we follow the *ex ante* school, reform should have been taken prior to the integration and not as its consequence. Currency areas not fulfilling this optimality criterion, should not have been formed in the first place, because the real fundamentals underlying - for example - the conversion rate would have been

altered by the labour markets reforms, should they be implemented, thus undermining the very stability of monetary integration.

This section presents theoretical foundations for analysing the interplay between the labour market institutions and monetary integration. There are two main classes of models. One originates from the Philips curve model by Barro and Gordon (1983) and focuses on the optimal monetary and labour market policy mix. The latter is more of a general equilibrium approach originated by Blanchard and Giavazzi (2003). This strand of literature takes the starting point at a link between product market integration and the processes concerning employment. Naturally, we commence with the conclusions implied by the developments in optimal currency area theory. Finally, recognising the commitment of European policy makers to meet the targets of Lisbon Strategy, we conclude theoretical section by analysing the potential linkages from labour supply to monetary integration.

2.1 The approach of optimal currency area theory

The theory of optimum currency areas (OCA), as first put forward by Mundell (1961), refined by McKinnon (1963) and Kenen (1969), provides a general framework for evaluating the economic prospects of a common currency. OCA theory suggests criteria that help to judge the costs and benefits of a monetary union. These criteria focus on the probability that countries face asymmetric economic shocks and on the ability of their economies to adjust swiftly after such shocks. If two or more countries generally face similar shocks and have flexible adjustment mechanisms in place to deal with them, they could consider forming a monetary union, because they no longer need the exchange rate as an adjustment mechanism, while common monetary authority can provide numerous benefits.

2.1.1 Endogeneity of the optimality

Frankel and Rose (1998) open a large debate on the endogeneity of the OCA criteria fulfilment. They put forward an argument that closer trade links could lead to business cycle synchronization and thus increase the symmetry of shocks. Or should we consider shock responses instead? According to traditional points of view¹, the opposite effect should prevail: international trade increases specialization, making shocks more asymmetric. The overall impact of trade integration on shock symmetry could thus be ambiguous, at least theoretically. Modern formal models of optimum currency areas do not seem to offer a unique answer either². Frankel and Rose (1998) stress the necessity of further analysis of the role of international trade by distinguishing between inter-industry and intra-industry trade. Inter-industry links reflect specialization, thus potentially causing asymmetries, while intra-industry trade should lead to business cycle co-movement. There is an on-going theoretical work in this direction³.

A number of empirical studies focus on measuring the degree of shock asymmetry across countries. In earlier research, judgment about shocks was based on cross-country correlation of real output, industrial production, or real exchange rate cycles⁴. Such approach, however, does not allow one to distinguish between shocks themselves and reactions to shocks. Since both components are present in actual series, similar results in terms of correlation coefficients might be observed in the presence of various combinations of shocks and responses to shocks.

Blanchard and Quah (1989) propose a bivariate vector autoregressive (VAR) procedure in order to separate shocks from responses. Moreover, this method makes it possible to identify the origins of shocks, for example, supply and demand. Blanchard and Quah (1989) define shocks as linear combinations of the residuals from a bivariate VAR representation of the real output growth and inflation. By construction, one type of shocks (labelled as "demand") have only transitory impact on the level of output, while another type

¹E.g. Krugman (1993).

²See Ricci (1997); see also Horvath (2004), for a recent review of OCA models.

³See, among others, Kose and Yi (2001).

⁴See, for example, Cohen and Wyplosz (1989), Weber (1990), De Grauwe and Vanhaverbeke (1993) and Artis and Zhang (1995).

of shocks (labelled as "supply") might have a long-term impact on the level of output. More precisely, if real output and prices are used as inputs to the VAR model, then "demand" shocks are defined so that they do not have a long-term impact on either output or prices, while "supply" shocks might have a long-term effect on output. It is crucial to understand that 'supply' and 'demand' are rather labels than an theoretical recognition of shock origin. Nevertheless, the VAR decomposition has become an especially popular tool in identifying shocks to assess the similarities of economic cycles in the case of European monetary integration.

Later, measuring co-movements of shocks across countries and regions were used for the assessment of OCA criteria. For example, high correlation between two countries' series of shock responses indicates that economic structures of the countries under consideration are quite similar. This methodology allows Bayoumi and Eichengreen (1996) to identify the "core" European countries, for which the cost of a common monetary policy could thus be low. Note that the coefficient of correlation of shock series represents a static measure. Therefore, it is difficult to judge if reactions to shocks *become* more symmetric.

However, since the degree of economic integration changes over time, there are few reasons to believe that shock asymmetry remains constant. The dynamics can be partially assessed by splitting the whole period and calculating the correlation coefficient by sub-periods, provided that sub-intervals are long enough.

There is, however, more fundamental critique to this approach. Fontagne and Freudenberg (1999) argue that "the central critique to be addressed to studies based on VAR estimates of asymmetric shocks refers to the assumption of structural asymmetries. The only way to relax this assumption is to use a Kalman filter in order to tackle the issue of a dynamic convergence of shocks." Boone (1997) applies the Kalman filter technique in order to obtain time-varying estimates of shock symmetry. Her results for Western European countries are consistent with those reported by Bayoumi and Eichengreen (1996) and, notably, give rich information about the dynamics of evolving symmetries. The results are generally interpreted in favour of the endogeneity hypothesis: the observed increase in supply and demand shock correlation goes along with deepening European integration.

The increasing number of studies focus on the analysis of symmetries between current European Union members and accession countries⁵ Compared to the earlier studies for Western European countries, current results indicate an increase in synchronization between the EU "core" and Italy and Portugal, previously considered "peripheral" countries⁶.

Babetski et al. (2003) extend the analysis of supply and demand shocks by measuring time-varying correlation in a way advocated by Boone (1997). Their results stress an ongoing process of demand shocks convergence between the EU and accession countries. Supply shocks tend to diverge, which is interpreted as a consequence of the restructuring process at work and the Balassa - Samuelson effect.

Interestingly, one can note a surprising segmentation in research interests. Two entirely separate classes of studies seem to co-exist: those focused on measuring correlation of shocks, and another ones concentrated on assessing a link between business cycles fluctuations and trade, exchange rate and other explanatory variables. More specifically, studies of the first group illustrate static or dynamic patterns of shock correlation, stressing the importance of distinguishing between shocks and responses to shocks. Studies of the second group identify the effects of trade and other variables on various business cycle indicators containing both shocks and responses to shocks. Babetski et al. (2003) tries to make a bridge between these two groups of studies, by confronting time-varying estimates of shock asymmetry with trade and exchange rate variables. This paper supports the hypothesis about demand shock convergence and divergence of supply shocks be-

⁵Fidrmuc and Korhonen (2003), Horvath and Ratfai (2004), Babetski, Boone and Maurel (2003) follow the structural VAR identification methodology developed by Blanchard and Quah (1989) and Bayoumi and Eichengreen (1996). Horvath and Ratfai (2004) concludes that correlation of neither demand nor supply shocks can be interpreted in favour of convergence. Fidrmuc and Korhonen (2003) find that supply shock correlation vary substantially from country to country. Correlation of demand shocks between the EU and the CEECs is substantial for Hungary and Estonia, while other accession countries show modest results.

⁶Supply and demand shocks are extracted from quarterly series of the real output and prices. Short time series (less than ten years of quarterly observations) complicates the econometric analysis. Naturally, other determinants beside bilateral trade, its specialization patterns, and exchange rate regimes may influence business cycle transmission between countries. One might think about tariffs and non-tariff barriers, institutional agreements, border effects, etc.

tween candidate countries, the EU-15, and Germany as alternative benchmarks. Estimated time-varying coefficients of shock asymmetry are then confronted with several indicators of bilateral trade intensity and exchange rate volatility. The results are in line with Frankel and Rose (1998) endogeneity hypothesis, stating that countries are more likely to satisfy criteria for a monetary union membership ex-post, as economic integration deepens.

In theory, the most important shock absorber would be labour market flexibility (*i.e.* easily adjustable wages) and labour mobility (also across the national borders). van de Covering (2003) reviews theoretical developments which allows to put this argument in a consistent framework. There seems to be a consensus in the literature that labour mobility is much more important as an adjustment mechanism. For example, Eichengreen (1990) finds that labour mobility is three times higher in the United States than in Europe. Blanchard and Katz (1992) provide evidence that labour migration plays a major role in reducing interstate unemployment differentials in the US. Decressin and Fatas (1995) adapt the framework of this study to compare US States and European regional labour markets and conclude that labour mobility plays a relatively small role in the adjustment of European labour markets.

2.1.2 Are rigid wages really bad for optimality of the currency areas?

The choice of the exchange rate regime is a special case of the more general issue of optimal monetary policy in an open economy. There is a new and fast expanding literature that uses the New Keynesian Economics to investigate the performance of alternative open economy monetary policy rules (Benigno and Benigno 2001), the macroeconomic and welfare properties of alternative exchange rate regimes, *cfr.* Collard and Dellas (2002) or Devereux and Engel (2002) and the welfare implications of different degrees of international policy coordination, including, among others, Obstfeld and Rogoff (2001), Canzoneri, Cumby and Diba (2002), Clarida, Gali and Gertler (2002), and Pappa (2004). The message that emerges from this literature concerning the value of the exchange rate instrument is more mixed. The results depend on the currency denomination of trade, the structure (completeness) of financial markets, the type of policy rule considered and differences in size across countries.

As discussed above, traditional OCA literature assumed labour markets to be the main channels of asymmetric shock accommodation in the monetary union - the flexibility of labour markets (and labour force mobility) are to assure the possibly painless adjustment to adverse shocks. However, Dellas and Tavlas (2004) develop a theoretical model, where exactly the opposite is true - countries with a high degree of nominal wage rigidity benefit from monetary union, specially when they join other, similarly rigid countries. Conversely, countries with relatively more flexible wages tend to be worse off in unions with countries that have more rigid wages. They construct a multi-country model, where some countries are characterised by flexible labour markets and others are considered more rigid. In a general equilibrium framework, this model comprises active monetary policy (along the Taylor rule), complete asset markets and a variety of shocks. The model provides comparative results for flexible exchange rates, monetary union and an in-between solution, with some countries forming a monetary union and others pursuing a floating regime.

Conclusions reached by this paper are to some extent stunning. Namely, comparing to the benchmark of flexible exchange rate regime, Dellas and Tavlas (2004) demonstrate that gains from forming a monetary union are highest when nominal wage rigidity is high, while in the case of flexible labour markets they are indeed small. The improvement in welfare comes from three sources: (i) from the existence of nominal wage rather than price rigidities, (ii) from the existence of important supply and monetary shocks and (iii) from the fact that the model uses foreign intermediate goods in domestic production. This implies that an exchange rate change that has favorable effects on the demand for domestic products has unfavorable effects on the supply side of the economy as it increases the cost of domestic production. For fiscal shocks, flexible rates fare better (for the reasons suggested in the traditional OCA literature).

Moreover, based on these results one can state that asymmetries in wage flexibility across countries play a more important role in the evaluation of alternative regimes than other types of asymmetries (*e.g.* in the shocks, monetary policy etc.). Countries with substantial wage rigidities benefit from monetary union, specially when their partners are equally rigid. Countries with relatively more flexible wages are better off

when they stay out. Importantly, it is not absolute level of rigidity that plays role, but relative vis-a-vis other participants of a currency area.

The model of Dellas and Tavlas (2004) takes a calibrated approach, which means that the above findings are results of simulations based on a specific case (three countries: two with higher relative rigidity - France and Germany - and one with higher relative flexibility - UK). The *spiritus movens* through which these results were obtained essentially builds on the stabilising properties of flexible exchange rate regimes - if this instrument is absent, there are no countercyclical forces that would prevent overheating (or recession) of a flexible economy, while exactly due to the flexibility, overheating (or recession) is of higher magnitude⁷. Comparison of the scenarios comprises also welfare effects of alternative exchange rate regimes.

This analysis does not account for non-fundamental fluctuations in the nominal exchange rates, which may have significant welfare effects, while monetary integration eliminates them as a source of potential adverse impact. Also, no transaction costs are explicitly modelled in the simulation, but if one assumes that flexibility of adjustment is a proxy of the transaction costs magnitude, the conclusions would be quantitatively decreased but qualitatively unaffected. Finally, the main gains to welfare come from moderation of macroeconomic volatility while no channel for direct welfare improvements were specified. Therefore, preferable scenarios in this setting are always those which guarantee lowest variability and not those that guarantee highest levels of welfare.

2.2 Optimal monetary and labour market policy mix

The discussions about interlinkages between monetary integration and labour market date back to Bhagwati and Kusters (1994) and Kopits (1997). It has often been suggested that the low unemployment rate in the US is due to dynamic and flexible job markets, while the high European unemployment results from rigid and inflexible markets. An important issue is then to ask: which features of labour markets do generate unemployment and which do not matter? Nickell (1997) classifies labour market institutions into the following categories: (i) employment protection and labour standards, (ii) benefit replacement ratio and benefit duration, (iii) active labour market policies, (iv) union density and coverage of bargaining agreements, (v) co-ordination of wage bargaining, and (vi) the tax wedge. Consequently, if one looks at labour market institutions from the perspective of potential linkages to monetary integration, it is imperative to consider the models incorporating trade unions and wage bargaining process, the question of unemployment persistence and tax regulations. In addition, one cannot complete the theoretical landscape without considering the effects of stabilisation and inflation biases. Finally, literature suggests a "precautionary" motive for the labour market reform. These are the areas covered in the subsequent sections.

⁷Dellas and Tavlas (2004) give two examples of shocks where this problem would be particularly important: a positive productivity and monetary shock in a flexible country. Consider a positive productivity shock in a flexible country - its output increases and the price deflator decreases. Under flexible rates, the currency appreciates. The appreciation works against the deterioration in the flexible country terms of trade that arises from the drop in the nominal price of its goods. The net effect turns out to be a small real appreciation of the currency, which reduces the expansionary effect of the productivity shock. Hence, the flexible regime has stabilizing properties. Under currency union, the nominal exchange rate effect is absent, so the drop in flexible country prices leads to a substantial real depreciation of its currency. This improves international competitiveness and amplifies the effect of the supply shock on output. Furthermore, this is not the only amplifying effect associated with monetary integration. Under flexible rates, the nominal appreciation of the flexible country currency has a negative effect on prices in this country which would push the real wage up constraining the expansion in output - this channel would be absent under monetary integration. Consequently, employment in the flexible country expands more in a monetary union following a domestic productivity shock. Consider now a positive monetary shock. Under flexible rates, the increase in the interest rate leads to a nominal and real appreciation of the flexible country currency, reducing employment and output. With monetary integration, the policy shock comes from the union-wide central bank and affects all countries. Because of differences in the degree of nominal wage rigidity across countries, the drop in nominal wages and prices is greater in the flexible country than in rigid ones. As a result, it experiences a deterioration in its terms of trade, which works against the contractionary effects of the higher interest rate. The net effect is positive and can be quite large when trade elasticities are high.

2.2.1 Trade unions and wage bargaining

If one wants to analyse the role of trade unions and wage bargaining schemes in the wage formation process, there are three important themes to consider. Firstly, the union density, which is the coverage of employees with negotiated wage schemes. Individual agreements are typically considered to be more elastic, since even the termination of contract bears less costs than in the case of group agreements. Naturally, the driving characteristic here are how long and how costly it is for the wage contracts to adjust to new macroeconomic conditions.

Second issue is the level at which wages are being negotiated. One argument goes back to Keynes, who argued that the concerns of employees over relative wages would make them oppose money-wage cuts, unless all wages could be cut simultaneously. Evidence for a highly unionised economy such as Sweden indicates that inter-firm comparisons do play an important role, (Agell and Lundborg 1995), (Agell and Lundborg 1999). Ball and Romer (1991) stress how the benefit of changing the wage (and thus the price) in an individual firm depends, *via* product demand interrelationships, on whether or not other firms do the same⁸. Co-ordination of wage bargaining is a way of removing this indeterminacy and securing that the economy ends up in a good equilibrium in which wages adjust to shocks⁹.

In systems with decentralized wage setting, contract length may be chosen in a socially inefficient way, (Ball 1987). Most notably, there exists an aggregate demand externality: wage setters in an individual bargaining area do not take into account that a long-term wage contract on their part will contribute to aggregate demand fluctuations in the economy. The reason is that money-wage stickiness in a part of the economy means lower flexibility of the aggregate price level in the case of nominal shocks. If bargaining is coordinated, wage setters can internalise this externality. This effect tends to make wage contracts shorter under coordinated than under uncoordinated bargaining. Calmfors and Driffill (1988) derive a theoretical framework supporting a hump shape relationship between bargaining coordination level and real wage (or unemployment)¹⁰.

In the context of EMU, Rantala (2001) builds on the Barro-Gordon model, introducing countries, each with a national trade union who proceed with the monetary integration. He demonstrates that in the presence of strategic interaction between the central bank and the labour unions changes in monetary regime will have real effects. Namely, monetary regime will affect the labour unions' real wage-employment trade-off, *i.e.* the real consumer wage elasticity of labour demand is endogenous in this model.

In this model there is a continuum of countries, each of them containing a continuum of firms, which all produce the same product (therefore, product market is perfectly competitive). In each country, a share of firms is assumed to be flexible, while the rest of them experiences downward wage rigidity. The following time line is defined: firm-specific trade unions set nominal wages in the "inflexible" sectors of each country, production shocks materialise, common central bank sets inflation targets for the whole currency area and, finally, competitive nominal wage is determined in the "flexible" sectors. Consequently, Phillips curve in this model is essentially an aggregation over sectors of the firm/union specific (and then countries) labour demand curves. Therefore, nominal wage flexibility affects the slope of the Phillips curve and the production shock transmission to the unemployment, but not unemployment persistence. The loss function assumed in

⁸More explicitly, with small demand shocks, adjustment costs make it unprofitable for each firm to change the wage even if others do. With very large shocks, it will always pay to adjust the wage independently of what others do. But for shocks of intermediate size, the individual wage setter may gain from adjusting the wage only if others do the same. Which equilibrium materialises depends on the expectations of what other wage setters will do.

⁹One obvious explanation of the difficulty of adjusting money wages in a decentralized system is that contracts changes are then usually unsynchronised. In contrast, there is automatic synchronisation of changes across the economy when different firms or sectors delegate bargaining to peak-level organisations. Also when the formal contracts are concluded at a lower level, synchronisation can be achieved either because the peak-level organisations can affect the timing of negotiations (as in Austria) or because of more informal mechanisms of co-ordination (as in Japan and Sweden).

¹⁰Finally, there is the possibility that the interests of outsiders with a weak affiliation to the labour market are taken into account to a larger extent when bargaining is coordinated across the economy, because unions then make more economy-wide considerations. Gottfries (1992) has emphasised how the majority of employed insiders, with a small lay-off risk, are likely to prefer contracts that fix money wages for a long period of time when inflation is low and stable, because real wage developments then become easy to predict, at the same time as employment variations will mainly affect outsiders.

the model concerns deviations from expected (long run) inflation targets and unemployment *levels*, which necessitates the problem of inflation bias in monetary policy¹¹.

The main result of the paper is that the establishment of a monetary union improves employment, provided that the degree of central bank conservatism is sufficiently high, whereas with low degrees of conservatism employment falls. The impact on inflation is ambiguous - it tends to be higher in a monetary union, because unlike in a floating exchange rate regime, monetary policy is not constrained by fears of inflationary real exchange rate depreciation.

Importantly, Rantala (2001) imposes (for the purposes of solution uniqueness) that governments coordinate their reform efforts. Namely, they choose the flexibility in order to optimise the global policy objective (the sum of member country governments' objective functions). In a symmetric case this assumption has no far reaching consequences, because the individual reform level is identical with the average one. However, if this assumption is relaxed, the model can no longer have a solution. The intuition suggests however, that asymmetries can indeed introduce an important context to this type of models and certainly this would be a viable direction for future research.

Europeanisation of monetary policy seems to create incentives for wage bargaining coordination. Some researchers - e.g. Viser (2003) and Calmfors (2001b) - have even suggested some potential solutions for cross-border bargaining coordination in response to the improvement of firms negotiating position. This improvement is usually attributed to the facilitation of production reallocation within the EU. How much would coordination matter? As demonstrated by Rantala (2003) and suggested by many other theoretical works, national trade unions - even if they successfully force their nominal wage increase agenda - have only limited impact on EMU wide nominal wage increase (see section 2.2.2. Since the central bank sets its targets with respect to the averages, actual policy may indeed differ from what would be suitable for a particular country. With unsynchronised business cycles or highly asymmetric shocks, real wage evolutions may be very different from the expected ones. If wage settlements were to be coordinated through the Euro zone, wage setters would once again internalise the anticipated monetary policy reactions (now of the ECB) to their actions. According to Calmfors (2001b) this could promote wage restraint and thus would be welfare improving. Table 1 summarises the potential links between monetary integration in Europe and wage restraint.

It seems that on three accounts, EMU constitutes a unique channel of transmission. These comprise the potential for supra-national coordination of wage bargaining process, the role of openness and relative size of external effects. The first of these elements bases on the presumption that more centralised and coordinated wage negotiations seem to allow a cooperative equilibrium in the game instead of the noncooperative one. Namely, Agell and Lundborg (1995) and Agell and Lundborg (1999) use the example of Nordic countries to show that the higher the area of negotiations may foster greater understanding on the side of trade unions, thus leading to more moderate wage claims. This would be in line with the original concept of Calmfors and Driffill (1988), but has not been practiced on a supra national level before.

Table 1: Effect of EMU on wage restraint

Channel of transmission	Effect on wage restraint	Conditionality of effects	Eurozone only?
Relative size of external effects	Decreases	Larger on large countries or those with independent monetary policy	Yes
Openness to international competition	Increases	Larger on countries with high intra-EMU trade	Yes
Unions' political bargaining power	Increases	Larger for countries with more centralised bargaining	Yes
Decreased union density	Increases	Larger for countries where unions less threatened by competition	No
Counter-inflationary credibility of central bank	Increases	Larger for those who gain more credibility	No

Notes: Wage restraint defined as wage growth minus productivity growth, so the more negative the value, the greater the restraint.

¹¹Consult Sections 2.2.3 and 2.2.4 for more details on the consequences of this assumption.

The second concept - the one of openness - may turn out to be a two edged source in a way that larger transparency of prices should induce convergence, stimulate cross-national competition and thus put more pressure on lowering markups and fostering competitiveness. However, it may actually happen that with time the pressure will be relaxed with EU multinationals obtaining monopoly power on a supranational scale with cross-border takeovers. Undoubtedly, whichever the direction of adjustments, they should be faster in countries more open to intra-EU trade.

Finally, with the constraint of common monetary policy, fiscal policy and other economic instruments may provide external cross-border effects. In the area of labour markets, forward and backward linkages of these institutional designs may be essentially unlimited, depending on the depth and the breadth of changes. Naturally, those countries who do not participate in EMU but do take part in single market regulations - will observe larger effects.

2.2.2 Unemployment persistence

Unemployment persistence can arise from at least two sources. There may be labour adjustment costs affecting the firms' hiring and firing decisions. Alternatively, the wage setting process itself can work as a source for unemployment dynamics. According to Blanchard (1991) contention, indeed in the medium run the persistence of unemployment, the dynamics coming from wage bargaining dominate those coming from search, firing and hiring costs. As in (Blanchard and Summers 1987), when the wage setting process is dominated by insiders of the labour market, the effects of production shocks tend to persist, since changes in the number of insiders will lead to changes in the objectives of the labour unions.

When unemployment persistence is incorporated into Barro-Gordon model, the central bank's problem becomes explicitly dynamic in nature. When setting monetary policy, the central bank has to bear in mind that its policy will affect unemployment not only in the current period but in the future as well. It follows that it becomes more important to stabilize production shocks because once unemployment rises it will take longer time before it returns to the initial level.

The problem of unemployment persistence - especially relevant for European countries - has been explicitly addressed by Rantala (2003). In this model, central bank does not target along the Phillips curve, but follows long run equilibrium (NAIRU) unemployment as benchmark for deviation. The main contribution of this model is to apply political economy framework, because each of the governments chooses the extent of labour market reform, which is equivalent to nominal wages flexibility. Political cost incurred due to the reforms has a counterpart in lower values of social loss function and less requirements for stabilisation. The most controversial element of this model is the assumption about labour market reform coordination across countries. More explicitly, countries are choosing the optimal reform level (flexibility parameters) of the member states so as to minimise the joint losses of national governments. Taking into account the political character of the costs incurred by the reformers, this committed coordination seems highly unlikely. At the same time, this is exactly the element that brings about the strategic aspect to the model.

Conclusions of Rantala (2003) may be summarised as follows. Naturally, the more asymmetric the shocks are, the more flexibility is desirable, while coordination may contribute to lowering the "stabilisation bias" of the central bank. In the case of "new conservatism" paradigm on the part of the central bank¹², coordination leads to lower flexibility, which actually improves the outcomes of the central bank's decisions. Theoretically, there could be two effects affecting flexibility under monetary integration: small-in-big a la Calmfors (2001a) or benefiting from lowering the "stabilisation bias". The analytical results proved ambiguous, but the simulations performed by Rantala (2003) actually demonstrate that the former dominates. Therefore, countries outside monetary union have higher rewards from - and thus, higher levels of - flexibility in the labour markets.

The most interesting finding of this paper originates in a different sphere, however. Namely, in every theoretical model, governments chose a level of reforms once and forever, then maintaining integrity.

¹²It is equivalent to too little stabilisation, or - put differently - benchmarking actual unemployment rate on NAIRU. See (De Grauwe 2000) for coverage of the "new conservatism" doctrine.

Observing the changes over political cycles across Europe, this seems highly unlikely. Therefore, actual level of flexibility is likely to remain below the optimal (even without coordination). Anticipating it, it is rational for the central bank to even abuse "new conservatism" paradigm, thus allowing larger swings in unemployment rates. These arguments are quite intriguing in the context of the so-called precautionary motive as discussed further in text basing on - among others - Calmfors (2001b). There seems to be a rather wide consensus about the potential on the side of central bank to actually "teach" governments to establish desirable flexibility levels.

2.2.3 Inflation bias and stabilisation bias

While a number of explanations have been put forward to explain the "great inflation" of the 1970s, one of the most influential is the time-inconsistency theory advocated by Kydland and Prescott (1977) and Barro and Gordon (1983). Time-inconsistency describes situations where, with the passing of time, policies that were determined to be optimal yesterday are no longer perceived to be optimal today and are not implemented. The key insight was that the reason why these policies would not be implemented also could lead to inflationary policies being implemented in their place. In other words, time-inconsistency could generate higher inflation.

In principle, inflation bias follows from the fact that with the imperfections on product and labour markets, unemployment rate that clears the labour markets is higher than the one we would expect with perfect competition across all markets. In other words, market clearing wage and resulting unemployment are higher than the natural rate. To keep unemployment close to the natural rate, the central bank must try to lower unemployment below the inefficiently high rate. Since workers negotiate their wage rate with firms based on what they expect inflation to be, to the extent that workers correctly anticipate the inflation rate, the prevailing unemployment rate is the (inefficiently high) market-clearing rate. Therefore, instead of following through and implementing the announced policy, the central bank can create a little more inflation - an inflation surprise - which lowers workers' real wages, stimulating firms' demand for labor. With the nominal wage rate fixed, the labor market now clears at a lower unemployment rate. Thus, at the cost of slightly higher inflation, the economy reaps the benefit of lower unemployment. Of course, workers soon realize that the central bank's announcements are not credible, and they will come to expect higher inflation. And when workers expect higher inflation, it becomes increasingly costly for the central bank to create an inflation surprise. The equilibrium outcome is for inflation to rise to the point where the central bank finds that the benefits of any additional inflation surprises are fully offset by their costs. The discrepancy between the average inflation rate that occurs and the inflation target is known as the discretionary inflation bias.

Another type of problem may also arrive. Namely, the promise to keep monetary policy tight over the foreseeable future dampens the inflationary impact of the adverse supply shock. However, having promised a tight monetary policy, and having secured lower inflation today, the central banker now has less incentive to implement the promised tight policy in the future. Realizing that when the future actually arrives the central banker will not implement the tight monetary policy that it promised, households and firms will expect higher inflation in the future than if the tight policy were implemented. As a consequence, to dampen the inflationary effect of the adverse supply shock, central bankers have to raise interest rates more today, generating more unemployment, than they would if they could commit themselves to implement the tight policy that they promised. In this scenario, the effect of the time-inconsistency is called stabilization bias because the time-inconsistency affects the central banker's ability to stabilize inflation expectations and hence stabilize inflation itself. The stabilization bias adds to inflation's variability, making inflation more difficult for households, firms, and the central bank, to predict.

This problem has been analysed in many frameworks, with many specifications of the central bankers' objective function. Literature typically assumes that the central banker targets a rate of unemployment strictly below the natural rate. Two conditions are required to deliver the result: (i) uncertainty about

next period's realizations of inflation and unemployment and (ii) asymmetric unemployment preferences. Following the literature, inflation and unemployment are related by an expectations-augmented Phillips curve:

$$u_t = u_t^n - \lambda(\pi_t - \pi_t^e) + \eta_t, \quad \lambda > 0, \quad (1)$$

where u_t , u_t^n and π_t are rates of unemployment, natural unemployment and inflation, respectively. In addition, π_t^e is the public consensus about the forecast of inflation at time t established at time $t - 1$. In standard notation, η_t is the aggregate supply disturbance. With an assumption about the rationality of forecasting, $\pi_t^e = E_{t-1}\pi_t$ conditional on the set of information available at time $t - 1$ denoted by I_{t-1} . Finally, natural rate of unemployment evolves over time following the law of motion determined by:

$$\Delta u_t^n = \psi + \theta_1 \Delta u_{t-1}^n + \dots + \theta_q \Delta u_{t-q}^n + \zeta_t, \quad (2)$$

where ζ_t denotes the unpredictable component of the natural rate and all θ_i guaranteeing stationarity (gradual fading out of the shocks). Naturally, central bank targets inflation by the means of a policy instrument (typically, short term interest rate), while this instrument is usually assumed to be imperfect, so that $\pi_t = i_t + \epsilon_t$, with i_t and ϵ_t denoting instrument and control error, respectively. Since i_t is chosen at $t - 1$ it is conditioned by I_{t-1} .

Inflation bias problem becomes more severe if one relaxes the assumptions about the nature of the unemployment changes. Notably, with unemployment persistence, central bank automatically becomes forward looking (decisions taken at time t automatically transform to I_t , influencing decision set at time $t + 1$). This follows from the fact that unemployment *level* at time t predetermines the future ones. This has been analysed by Lockwood and Philippopoulos (1994). In addition, Lockwood, Miller and Zhang (1998) and Svensson (1997) demonstrate that optimal stabilisation increases with the extent of unemployment persistence, which additionally enforces the stabilisation bias.

2.2.4 Monetary integration and the political economy of labour market reforms

Some research suggests that incentives for labour market reforms may in fact be influenced by the establishment of a monetary union. This has been analysed, among others, by Sibert and Sutherland (2000) and Calmfors (2001a). These two approaches summarise best the political context of incentives to reform labour markets before one enters monetary union, subsequent to accession or when one stays out.

In (Sibert and Sutherland 2000) reform refers to any structural change in the labour markets which reduces the equilibrium rate of unemployment. The government can choose the level of reform before labour unions set their wages and before monetary policy is set. The reform lowers the equilibrium rate of unemployment but entails a political cost to the government. This cost can arise for various reasons, eg. the reform reduces real wages or because workers value labour market institutions themselves. The main argument of these papers is intuitive. Outside a monetary union a low level of reform implies that unemployment is high. In addition, in the presence of an inflation bias, inflation will be high as well. If the government chooses a low level of reform in a monetary union, the first effect is obviously the same. However, the second effect is reduced. High unemployment in one member country has only a small effect on the area-wide average level of unemployment (same for real wage growth). The common central bank cares about the average level of unemployment and thus inflation bias is smaller in a monetary union. Therefore, the governments' incentives for labour market reform are reduced in a monetary union and the chosen reform level will be lower.

Calmfors (2001a) analyses three mechanisms, by extending Barro-Gordon model. Namely, he analyses the links between employment variability and the incentives to reduce equilibrium unemployment. He takes a standard specification of Philips curve as in (Barro and Gordon 1983) with the main modification of "surprise unemployment" as a source of a stochastic shock (rather than "surprise inflation"). The unemployment in a representative economy is thus specified as:

$$u = \bar{u} - \beta(\pi - \pi^e) + \epsilon, \quad (3)$$

where u and \bar{u} denote unemployment and equilibrium unemployment rates, respectively, while π^e is the expected inflation rate. Unanticipated economy wide shock ϵ consists of two components: an asymmetric ν and symmetric ω , which are both assumed independent and symmetrically distributed. In this setting, equilibrium unemployment rate of a representative country is assumed to depend negatively on the amount of structural reform s , so that $\bar{u} = \tilde{u} - \delta s$. Naturally, the responsiveness of the natural unemployment rate to the reform (δ) may differ on a country by country basis, but for the sake of argument, Calmfors (2001a) assumes it to be identical. Traditionally, there is a government loss function, while the authorities intuitively dislike all the components: inflation, unemployment and reform (due to the political cost).

$$L = \frac{1}{2}\pi^2 + \frac{\lambda}{2}u^2 + \gamma s, \quad (4)$$

where λ and γ indicate relative weights attached by the governments to unemployment and reform, respectively. Finally, in each case monetary policy is delegated to an independent central bank, while the preference for inflation and unemployment are the same for the government and the central banker.

Outside the monetary union, given the amount of reform, inflationary expectations and realized shock, central bank determines inflation to minimise (4) subject to $\bar{u} = \tilde{u} - \delta s$. This results in a standard result of an inflation bias, which grows with the equilibrium unemployment \bar{u} , responsiveness to unanticipated inflation β and unemployment aversion λ . This conclusion is best summarised by

$$\pi = \beta\lambda\bar{u} + \frac{\beta\lambda}{1 + \beta^2\lambda}\epsilon. \quad (5)$$

Consequently, government takes it into account when deciding about the extent of labour market reforms, which implies the choice of s as to minimise (4) subject to (3) and - as in the case of central banker - the constraint of $\bar{u} = \tilde{u} - \delta s$. Consequently, the resulting equilibrium unemployment in an economy outside a monetary union is given by

$$\bar{u}_{outside} = \tilde{u} - \delta s_{outside} = \frac{\gamma}{\delta\lambda(1 + \beta^2\lambda)}. \quad (6)$$

The main difference for economies in a monetary union is that the room for inflation bias is potentially smaller, because now the policy is delegated to a union-wide level. Each government takes this general tendency into account and subsequently decides about the extent of labour market reform, which implies that the resulting equilibrium unemployment is given by

$$\bar{u}_{inside} = \tilde{u} - \delta s_{inside} = \frac{\gamma}{\delta\lambda(1 + \beta^2\lambda/n)}. \quad (7)$$

Consequently, if there are very many countries in the union (or a country considered is small) so an individual impact on aggregate fundamentals is small, equation (7) simplifies to

$$\bar{u}_{inside} = \frac{\gamma}{\delta\lambda}. \quad (8)$$

Comparing (6) with (7) or (8) reveals that the equilibrium unemployment is larger in the union, while the extent of reform is smaller. This result essentially implies that governments in the monetary union fail to internalise the benefits lowering the aggregate inflation, which means monetary union may indeed be welfare reducing.

The key assumption driving these considerations is the composition of the central banker loss function, to account for unemployment level instead of deviation from long term equilibrium. If (4) is altered to

$$L = \frac{1}{2}\pi^2 + \frac{\lambda}{2}(u - \bar{u})^2 + \gamma s, \quad (9)$$

inflation bias may be eliminated. In this case, optimal reform outside the union is the same as in the case of a small economy, while equilibrium unemployment is given by (8). Therefore, incentives to reform are the same in for monetary union participants and those who opt out.

A slightly more complex - but perhaps more relevant case - is given by a setting in which labour market reform influences not only unemployment level, but also the flexibility of labour market adjustments. This may be achieved if one modifies the assumption of $\bar{u} = \tilde{u} - \delta s$. Namely, labour market reform signifies the degree of deviation from perfectly competitive outcomes (the more extensive the reform, the closer to ideal the labour market behaviour). Therefore, one could consider that adjustments are faster in countries who undertake more reform, which implies less responsiveness to inflation (more flexible wage adjustments) and more moderate consequences of external shocks. Therefore, currently the following unemployment equation may be formulated for a representative economy:

$$u = (\tilde{u} - \delta s) - \beta(1 - s)(\pi - \pi^e) + (1 - s)\epsilon. \quad (10)$$

A natural consequence of this formulation is that incentives to reform labour markets are naturally higher. Also because monetary policy has less impact (the effect of unanticipated shocks is reduced, since surprise inflation leads to a smaller fall in unemployment). If one compares the participation to non-participation case in this scenario, the conclusions are not clear. Obviously, incentives to undertake reforms exist for monetary union members, because the gain from wage flexibility is larger when monetary policy is no longer used to stabilise asymmetric shocks. On the other hand, outside a monetary union, there are still benefits because besides reducing the expected unemployment, it also lowers the inflation bias. Which of the effects dominates depends on the exact values of the parameters.

In the words of Calmfors (2001a): "If a country chooses a more sclerotic labour market policy, it faces the direct costs of a higher equilibrium rate of unemployment. But if the central bank uses monetary policy to fight all forms of unemployment, so that there is an inflation bias, there is also an indirect cost, because higher equilibrium unemployment creates a stronger temptation to inflate. Outside the EMU there are thus two costs of a sclerotic labour market policy: higher unemployment and higher inflation. If the country is inside the monetary union, the second effect is absent" (p.266-267). This justifies the overall conclusion that outside the monetary union incentives to reform labour markets are stronger and therefore the observed level of reform should be higher. However, it seems that the most interesting case considers a scenario in which labour market reform positively affects not only the equilibrium unemployment directly, but the flexibility of adjustment too. Then, it seems that flexibility to some extent plays the role of autonomous monetary policy (union-wide central bank no longer has to use inflation to stabilise asymmetric shocks). This implies that benefits of the labour market reform may indeed grow if one participates in the labour union.

2.2.5 Precautionary motive for labour market reform

TINA argument has mutated to a version rooted into the political economy of policy making. Namely, as in the previous approaches, political costs of engaging into some reforms may be considerable, but is also dynamically dependent upon the set of alternatives. Namely, it may be true that some levels of unemployment are socially acceptable in a society, which would imply that reforms are not necessarily influencing utility levels of the citizens (and governments) in a monotonic - let alone linear - way. However, a change in the set of alternatives may induce transition in the social preferences as well. Alternatively, one could consider the changes in the set of options at disposal. Since EMU introduces new stabilisation patterns, variability of unemployment in each separate country might indeed be affected. This argument is used to produce a concept of a precautionary motive for labour market reform.

Consider a case in which government is averse to very bad outcomes, for example because really high unemployment cause fear of voting them out of office. This requires that the marginal disutility of the government from unemployment is still increasing. A function satisfying these requirements was suggested by Calmfors (2001b) as

$$L = \frac{[(\pi - \pi^*)^4 + \lambda(u - u^*) \cdot 4 + \gamma s]}{4} \quad (11)$$

where π traditionally denotes inflation (and $*$ targeted goal), u corresponds to unemployment (and goal), while s is the amount of labour market reform. Assuming that short term Philips curve holds as, *i.e.*

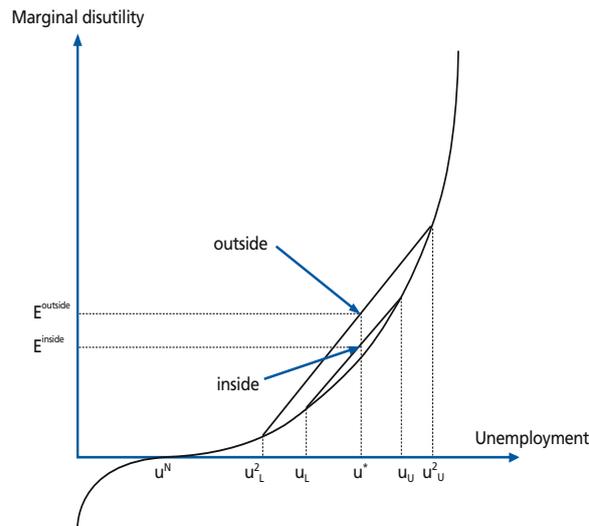
$u = u^e - \beta(\pi - \pi^e) + \varepsilon$ where u^e is the equilibrium unemployment, π^e is the expected inflation and ε denotes an asymmetric random shock (neglected henceforth for the clarity of argument). If the central bank has the same preference function as the government with respect to unemployment and inflation, it will chose inflation so that

$$\pi = \pi + k\varepsilon, \quad \text{where} \quad k = \sqrt[3]{\beta\gamma/(1 + \sqrt[3]{\beta \cdot 4\lambda})} \quad (12)$$

which implies partial stabilisation of shocks.

Now, how is it important for EMU? Assume that there is a given equilibrium (average) level of unemployment around which cyclical fluctuations occur. Outside the EMU, when domestic monetary policy can be used to stabilise asymmetric shocks, actual unemployment is somewhere in the range u_L or u_U on the graph below (depending on the magnitude of the shocks, for simplicity assume that probability of each shock is the same). Hence, the expected marginal disutility of equilibrium unemployment rate is given by $E^{outside}$. However, with membership in the EMU, asymmetric shocks can no longer be stabilised and unemployment variations around the given equilibrium level are therefore larger: unemployment ranges between u_L^2 and u_U^2 , which generates marginal disutility of E^{inside} - a considerably higher value. Larger expected marginal disutility of equilibrium unemployment means also larger expected marginal gain from reform that reduces equilibrium unemployment. This larger gain should be set against the political cost of reform. It follows that the incentive for reform becomes stronger inside than outside.

Figure 1: Precautionary motive for labour market reform.



Source: Calmfors (2001b).

However, in this construct we observe no inflation bias. Taking into account the problem of monetary policy inconsistency, one cannot provide a clear cut answer, because it depends on whether one assumes that marginal disutility of inflation is convex too. Lower equilibrium unemployment lowers the inflation bias, while this effect is only viable if a country does not participate in a monetary union - or a country is big, having large impact on union wide aggregates, as discussed in Section 2.2.4. Then, variation in inflation will also be reduced inside monetary union, thus reinforcing the argument presented above. Also, if labour market reform could be effectively coordinated across the monetary union, precautionary motive would be as strong inside the union as outside (recall the reasoning of Rantala (2003)). However, if this is not the case, incentives to reform labour markets are lower for participating countries. Therefore, one should expect less labour market reform upon monetary unification than could have been optimal otherwise.

2.3 The forward linkages of product market integration

A paper by Blanchard and Giavazzi (2003) constitutes an effort to explicitly address the link between product market integration and labour markets. In this setting the world consists of a continuum of economies, each using a Cobb-Douglas production function, where product and factor markets become integrated. They specifically allow some market imperfections with the basic motivation to replicate the potential linkages from labour market imperfections to prices and room for product markets markups. The main problem with this specification is that they assume production function linear in labour, while labour is also the only input. The setting in (Ebell and Haefke 2003) is quite similar in that respect.

Spector (2004) too uses Cobb-Douglas function, which implies that investment decisions and equilibrium unemployment are not linked contemporaneously, while wage elasticity of labour demand is constant. Unfortunately, as demonstrated by Herbertsson and Zoega (2002), there is at the very least co-existence in time (if not causality relationship) between investment and unemployment. Secondly, wage elasticity of labour demand is actually variable over the business cycles, (Rowthorn 1999). In addition, it seems to be dependent upon income level - Duffy and Papageorgiou (2000) using 28 years of data for 82 countries strongly reject homogenous σ (above unity for richer and below for poorer countries). Moreover, Bentolila and Saint-Paul (2003) demonstrate that the labour share variability is indeed considerable, which cannot be reproduced with the use of the Cobb-Douglas production function¹³.

2.3.1 General equilibrium approach

Kauppi, Koskela and Stenbacka (2004) demonstrate that for more general forms of CES assumption, these shortcomings may be eliminated. Namely, they consider

$$Y_i(K_i, L_i) = [(1 - a)K_i^{\frac{\sigma-1}{\sigma}} + aL_i^{\frac{\sigma-1}{\sigma}}]^{\frac{\sigma}{\sigma-1}} \quad (13)$$

instead of $Y_i(K_i, L_i) = K_i^{1-\alpha}L_i^\alpha$ for each company i . In addition, they allow wage negotiations mechanism in conformity with the "right to manage" approach¹⁴. The theoretical results they obtain show that higher product market competition lowers equilibrium unemployment. Moreover, wages (and unemployment) decrease with the growth of capital intensity only if capital-labour substitution elasticity falls short of unity. For larger elasticities the effects may be twofold. If elasticity of substitution is lower than price elasticity of product demand, wages grow with capital intensity. On the other hand, if production technologies are highly unadjustable (elasticity of capital-labour substitution is very large), the effect is undetermined. Then, relative bargaining position of the trade unions gains on importance. Interestingly, this model suggest that with the elimination of labour market imperfections, capital intensity is gradually less important for the evolution of wages and equilibrium unemployment.

2.3.2 The role of asymmetries

Andersen and Seneca (2008) consider separately wage rigidity and imperfect competition in the labour markets, as distinct channels of response to adverse shocks. They construct a theoretical (and simulation)

¹³Caballero and Hammour (1997) and Blanchard and Philippon (2004) suggest that on average capital share of income has been rising along with unemployment in Europe since the mid-1980s, implying that in recent years wage restraint has been ample and that the real wage gap therefore is not the source of current unemployment. The outlier status of the US economy with regard to income and wealth inequality is not attributable to wage restraint either. As Dew-Becker and Gordon (2005) and Piketty and Saez (2006) recently demonstrated, the large increase in income going to the top 1 and 0.1 percent of earners in the United States over the recent decade is largely due to the extraordinary rise in executive pay cumulated over several years. Ripatti and Jouko (2001) analyse the case of Finland, finding that the growth rate of the estimated labour-augmenting technical progress has decreased in 1990s, which is not consistent with the "new economy" hypothesis, of higher returns to more and more skilled labour. The estimated elasticity of substitution of approximately 0.6 suggests in fact, that capital and labour are quite close substitutes in Finish economy.

¹⁴This approach essentially assumes that firms and trade unions negotiate over the wages, while firms subsequently unilaterally decide about employment levels. Consumers are assumed to have CES utility function too, with standard "love for variety" preferences.

model with asymmetries in business cycles fluctuations under a currency union as well as different sizes of economies. They also consider differentiated structures of shocks. These asymmetries across countries may arise directly from country-specific shocks, but even aggregate or common shocks may create asymmetric effects when they interact with differences in size and structures. However, labour market adjustments need to be made within countries (no cross-border labour mobility) while adjustments are not assumed to be similar (differences in labour market institutions are explicitly allowed for). Asymmetry in the degrees of nominal rigidity may smooth aggregate output and inflation volatility, while asymmetry in the degree of monopolistic competition has essentially no effect on the volatility of macroeconomic variables of interest.

Thus, this model suggests that structural asymmetries alone are no hindrance to macroeconomic activity at union level. Also, benefits from labour market reforms (elimination of wage rigidities) is beneficial for union wide stability, but not necessarily for a particular country that is supposed to pursue these policies. What these findings essentially imply is that in case of adverse and symmetric shocks - unlike asymmetric shocks, where the hit transforms directly to output contraction - countries with less reform benefit from macroeconomic stability without actually contributing to it - this is like free riding and this may be the reason why coordination of labour market policies is crucial. What matters is not absolute wage rigidity/monopolistic competition in labour markets but relative (one country *vis-a-vis* the other in a two-country monetary union).

2.4 Looking at employment instead of unemployment?

Interestingly, all of the above models - if they notice at all the role of government or European Commission - assume that the aims of governments and central banker are aligned. Although this approach is not necessarily wrong, this may not be the whole picture. Namely, it may well be in line with the reality that the preference for aggregate unemployment rate of the ECB and European Commission are the same. However, the Commission seems to be more concerned with the long run growth prospects, which materialises for example with the Lisbon Strategy.

This long term growth strategy for the European Community puts much more emphasis on activity in general than unemployment rates in particular. This distinction may be very important if one tries to combine the two strands of theories discussed earlier with recent policy developments. Lisbon Strategy targets average EU wide activity rates for population, women, elderly (the so called "50+") and handicapped. Majority of the European Social Fund resources addresses activation and employability with only prospects of employment. At the same time, major goal of the Lisbon Strategy is to foster growth rate, productivity and competitive position of Europe.

2.4.1 Labour taxation

The heterodoxy of taxation economics immediately suggests two considerations. Firstly, the higher the taxation (and tax wedge, which includes all non-wage costs of labour), the lower the labour demand, especially for the low skilled workers. Secondly, there should probably be some optimum taxation level, *a la* Laffer curve, where social security and other individual contributions still optimise revenues not diminishing excessively potential employment. This problem has been approached by - among others - Shapiro and Stiglitz (1985) and Pissarides (2001).

Koskela (2001) and, subsequently, Koskela and Stenbacka (2003) propose a model in which wages are determined in the negotiations between employers and trade unions, while employment level is set in response to actual market needs. Therefore, although pricing of labour departs from perfectly competitive assumptions, the effects observed on the labour market measure directly the costs of these imperfections. The results of these considerations demonstrate, that in fact there should be strong link between labour taxation and employment level. Namely, higher marginal constant income tax rate transmits to total labour costs (even if employers and employees share this growth, so that total effect of wage increase is less than proportional) in the reasonable scenario that taxes on earned income are higher than the ones on benefits. For the proportional income tax, in case of elasticity of substitution falling short of unity, larger cost share

of labour implies higher wage elasticity of labour demand in absolute terms, which transforms to wage rate fall. If elasticity is larger than 1, labour demand becomes less elastic, which generates more room for higher wage demands. Therefore, employment will be reduced if labour can easily be replaced by capital, while the opposite will hold for the alternative properties of the production function¹⁵.

2.4.2 Labour productivity and labour supply

Lisbon Strategy aims at "more and better jobs", where better implicitly defines higher standards employment. One could then pose the question if these goals are internally coherent and how could they be related to the two strands of literature discussed above. This issue has been addressed for example by Cavelaars (2005). In principle, there are several reasons to believe that the amount of labour employed might have negative impact on labour productivity, including the main economic principle of decreasing marginal return to factors. Another reason might be that increasing the pool of workers might actually imply including in the group of workers those, who have lower productivity potential, thus lowering the observed average of output per worker. This last argument was elaborated for example in (Pomp 1998). On the other hand, there may be a different approach to this issue too, considering indirect effects. Namely, productivity growth accompanied by increase in labour demand may require larger labour supply to avoid excessive wage pressure. Moreover, higher productivity may imply lower unit labour cost, thus enabling labour market entry to the lower productivity workers.

Put in a simple framework, specifying a CES production function as

$$Y = A\{[\beta K^\theta + (1 - \beta)L^\theta]^{\frac{1}{\theta}}\}^\mu, \quad (14)$$

with standard notation of K denoting capital, L denoting labour and Y output, while θ determines the elasticity of substitution between capital and labour ($\varepsilon_s = -\frac{1}{1-\theta}$ and $-\infty < \theta < 1$) and μ denotes the degree of homogeneity of this function (increasing/decreasing returns to scale). Production efficiency A is assumed exogenous. Taking intensive form (per unit of labour), logs and total differentiation yields:

$$\dot{y} - \dot{l} = \dot{a} + \left[\mu\beta\left(\frac{A}{Y}\right)^{\frac{\mu}{\theta}} K^\theta\right] \dot{k} + \left[-\mu\beta\left(\frac{A}{Y}\right)^{\frac{\mu}{\theta}} K^\theta + \mu - 1\right] \dot{l}, \quad (15)$$

where \dot{x} denotes percentage change of X . To have the negative direct effect dominate (i.e. a negative sign of the term in the second square brackets), $\mu < 1$ is sufficient. For the case of constant returns to scale ($\mu = 1$) equation (15) simplifies to:

$$\dot{y} - \dot{l} = \dot{a} + \left(\frac{AK}{Y}\right)^\theta \beta \dot{k} + -\left(\frac{AK}{Y}\right)^\theta \beta \dot{l}. \quad (16)$$

In this case it is easy to show that the sign of the relation between $\dot{y} - \dot{l}$ and \dot{l} depends on the elasticity of capital-labour substitution (θ). If one recalls the findings of Kauppi et al. (2004), who modelled the impact of wage negotiations scheme on equilibrium unemployment and wages, the results seem consistent. Namely, employment increases with the growth of capital intensity only if capital-labour substitution elasticity falls short of unity.

Interestingly, Cavelaars (2005) tests this approach using data for 25 OECD economies over 1960-2000 time span. He finds, that although negative relationship may indeed be confirmed for the 1960-1980 period, it changes to positive in the subsequent decades. His results are fairly robust to the inclusion of outliers, additional explanatory variables and technological shocks (like ICT boom of 1990s). Consequently, the trade off between productivity and employment seems to disappear over time, as labour becomes more capital intensive and more skilled. It suggests that over the time, factors which affect both productivity and employment have become more important, while pro-employment policies are less likely to have negative impact on productivity at the macro level¹⁶.

¹⁵Please, note that in this class of models capital is usually a numeraire. Therefore, the increases and decreases in labour tax will only matter for the Cobb-Douglas type production function, if they change the relation between capital and labour price.

¹⁶For productivity forecasts for Polish economy, consult Bukowski, Magda, Marc and Zawistowski (2006).

2.4.3 Labour market policies

The emphasis on activity rates and increasing the amount and the quality of labour supply has rather far reaching consequences from the monetary policy point of view. Namely, although productivity might not suffer from these structural changes, monetary policy implications of these developments remain unclear. It is possible that the relatively stable inactivity rate helps to moderate any extra wage pressure arising from the decline in unemployment. However, it is equally plausible to argue that the inactive are so detached from the labour market that they have no impact on wage bargaining. Finally, decreasing the inactivity rate is the only viable long-term strategy for increasing labour supply in Europe. Consequently, with time the potential source of moderation will disappear, while wage pressure might continue to grow with the fall in unemployment.

To address this problem Brigden and Thomas (2003) develop a matching model of the labour market that explicitly distinguishes between the unemployed and the inactive, rather than treating all those who are out of work as unemployed¹⁷. Individuals with low levels of search effort (L-types), who can loosely be interpreted as inactive, adopt this strategy because they attach a higher value to home production or to leisure than their counterparts with high search effort (H-types) who can loosely be interpreted as the unemployed. In addition to lower search effort, the higher value that L-types place on home production or leisure means that they set higher reservation wages. In this model search intensities are chosen to maximise the benefits of non-employment (the best possible alternative approach), while wages are set in a Nash bargaining process.

The solution to the model is given by the conditions that both L and H type workers obtain equilibrium wages defined as a weighted average of his or her reservation wage and the potential gain from the match. If the worker has no bargaining power, he gets his reservation wage, which is equal (by the incentive compatibility condition) to the sum of state benefits and the value of leisure time adjusted for search effort. If the firm has no bargaining power the worker gets the entire potential gain from the match¹⁸.

Consequently, this theoretical model is able to reproduce all of the desirable effects. Firstly, activity rates are modelled explicitly. Secondly, labour supply affects not only the levels but also the probabilities in the market, thus transmitting to wages and wage pressures. Secondly, all elements influencing the costs of firing and hiring, including the institutional ones (like changes in employment protection, activation through training schemes, etc.) are explicitly visible in the model affecting the probabilities and the benefits from available alternatives to both workers and employers.

The main difficulty with this model is that it cannot be solved analytically. Therefore, Brigden and Thomas (2003) resort to simulation, calibrating the model to the UK data over 1994-2000. They use a number of institutional shocks, which addressed the labour market barriers for specific groups of population (eg. youth programmes, decrease in jobseekers' allowance, welfare-to-work schemes, etc.)¹⁹. The model is used to look at possible explanations for the recent sharp decline in the UK working-age unemployment rate, which has been accompanied by only a moderate reduction in the working-age inactivity rate. From the range of different shocks considered, the most plausible combination consists of a significant reduction

¹⁷The key difference between the groups is the value that they place on non-work related activities such as leisure. It is assumed that unemployed people have a relatively low valuation on such uses of their time. Consequently, they search harder for jobs, are prepared to accept lower pay, and therefore enter employment more readily.

¹⁸The 'potential gain from the match' needs some elaboration. In fact, wages in this model are renegotiated every period, which implies that even without resigning and moving to a different employer, workers may receive wage increase. In this model, costs to the company to find a new worker if one of them quits are explicit, irrespectively of the "marginal value of labour" that one worker brings to the company. This cost - one of the innovations of the Brigden and Thomas (2003) model - may be perceived as additional gain to the company of a worker not resigning.

¹⁹The calibration exercise of this form may actually be very informative with respect to the potential effectiveness of some instruments analysed in Section 3. They found for example, that if the reduction of the firing costs was about to bring the observed changes in the labour market, there would have to be a substantial state subsidy. The most plausible impulses involve a rise in the fraction of individuals with low search effort, and a reduction in benefits to the unemployed. For example, the rise in the proportion of students in the working-age population over the 1990s could have raised the share of individuals with low search effort correspondingly, while the stricter benefit regime since the mid-1990s could have increased the attractiveness of working compared with being unemployed.

in unemployment benefits, perhaps reflecting reduced coverage, coupled with an increase in the student population²⁰. None of the plausible shocks implies movements in unemployment and inactivity that would be accompanied by a rise in wage aggregate pressure.

Similar context - search and matching model - has been taken as a starting point by Zanetti (2007), who develops a theoretical framework for capturing macro-level fluctuations based on micro-level adjustments. Rigidities are introduced with search and matching frictions in the labour markets and price stickiness in the goods market, whereas the model is a general equilibrium approach (DSGE). The results suggest that an increase in firing costs reduces the volatility of output, unemployment, employment, and flows both in and out of employment, while the volatility of inflation, real wages and labour market tightness all increase. The presence of firing costs affects the intertemporal employment decision of firms, since an increase in current employment exposes firms to future firing costs. This induces firms to decrease lay-offs and hiring, leading to higher unemployment duration and lower unemployment incidence. The mass of jobs sensitive to deteriorations in the economy decreases and so disturbances displace a lower number of workers. Since quantities are more costly to change and disturbances affect a lower number of jobs, firms adjust to shocks through prices, changing them aggressively. Hence, inflation becomes more volatile.

Zanetti (2007) analyses also the effects of unemployment benefits. In this model, volatility of output, unemployment, employment, and flows in and out of the labour market increases with the growth of replacement rate, while the volatility of inflation, real wages and labour market tightness decreases. Higher unemployment benefits make unemployment less painful for workers, causing the duration and flows into unemployment to increase. The mass of jobs sensitive to deteriorations in the economy increases, which amplifies the effect of shocks on labour quantities and output. Since workers have an incentive to stay out of employment as long as they are eligible for unemployment benefits, and shocks displace a larger number of jobs, the volatility of labour market quantities increases. Firms find it more convenient to adjust the employment level in response to shocks, so that they are less likely to adjust their prices in response to disturbances. As a result, inflation volatility decreases.

What Zanetti (2007) essentially suggests is that labour market institutions introduce certain trade off between real and nominal stability. With more labour market frictions, nominal values may be controlled, but the entire adjustment happens on the real side of the economy. On the other hand, more flexible labour markets necessitate higher nominal volatility, which may lead to more of an inflation and stabilisation bias. One could pose a question about the long term consequences of this trade off. Namely, with more frequent unemployment spells, individual durations of being without employment are likely to increase, which will inevitably lower labour supply and thus constrain economic growth. On the other hand, with stabilisation bias one is likely to observe higher equilibrium unemployment levels due to more restrictive monetary policy. Therefore, the potential consequences in either case comprise lower labour supply.

2.5 Summary of theoretical considerations

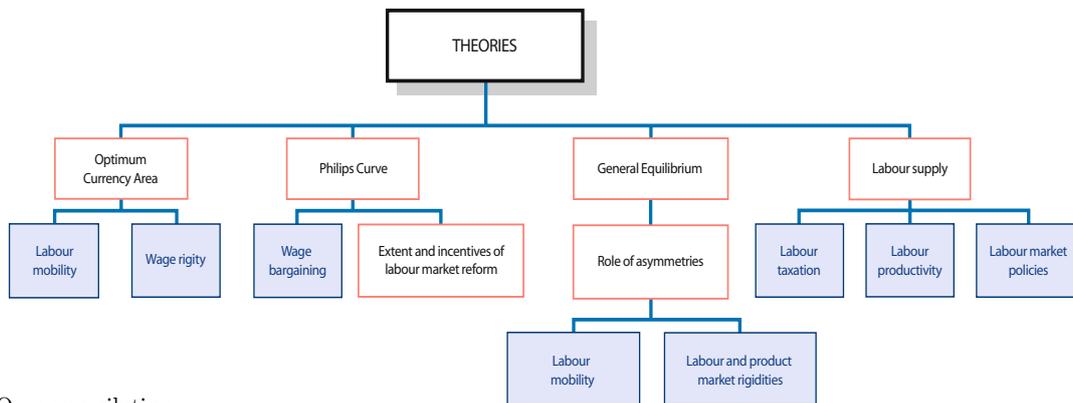
Summarising, the variety of approaches to linking labour market institutions to the process of monetary integration is indeed enormous. Naturally, the above review is not complete in a sense that the body of theoretical work in this domain is indeed extensive. With such abundance, one requires a common framework to summarise the vital areas for empirical research. Figure (2) proposes a scheme developed basing on the above review, encapsulating the main channels and classes of theoretical approaches to this nexus. Blue shaded areas denote channels, while red frames correspond to the classes of theories, which allow to introduce these channels. These considerations recapitulate to five possible stakeholders and incentives to them, which need to be tested for empirically. These are reported in Table (2).

Naturally, discussion about monetary integration is to a large extent a dispute over macroeconomic stabilisation. The problem with incorporating labour markets into this reasoning is that in principle these institutions are a two edged sword. The basic question consists of whether one wants to determine stabilisers

²⁰Please note, that this is actually quite similar to the two evolutions over 1995-2005 decade in Poland, with large decreases in unemployment accompanied by moderate increases in inactivity rates.

for one country within union or union-wide stabiliser. For example, labour mobility in theory is one of the adjustment channels along which asymmetric shocks may fade out - negative output shock in one region produces higher unemployment rate, which should induce workers to move elsewhere, where job prospects are better. Regardless of how likely this scenario is in Europe, this movement plays a role of the union-wide stabiliser only if workers move either to fill the employment gaps in some regions (whatever the cause

Figure 2: The framework for comprehending theoretical approaches



Own compilation.

of their emergence, for the sake of argument one needs an extremely strong assumption of comparative sizes) or if they spread equally across they currency area, thus contributing to moderate unemployment increases everywhere. However, such scenarios are not very likely - adjustments may indeed be painful for everybody, contributing to increased volatility of real as well as nominal indicators. If these workers remained unemployed where they resided initially, the impact on aggregate union-wide employment would be moderate, which would call for equally moderate stabilisation²¹.

Table 2: What needs to be tested for empirically

Stakeholder	Class of theory	Role of labour market policy
Government	OCA	Wage rigidity (legal constraints)
Workers (trade unions)	OCA	Wage rigidity (bargaining power, myopia)
Government	OCA	Labour mobility (legal limitations)
Workers	OCA	Labour mobility (willingness)
Central bank	Phillips curve	Inflation and stabilisation bias
Government	Phillips curve	Incentives to reform labour markets in the context of monetary integration
Trade unions	Phillips curve	Wage rigidity (bargaining power, myopia)
Government	General equilibrium	Product and labour market imperfections (legal barriers to market clearing)
Workers (trade unions)	General equilibrium	Labour market imperfections
Employers	General equilibrium	Product market competitiveness
Employers	Labour supply	Tax wedge
Unemployed	Labour supply	Labour market policies
Employers	Labour supply	Labour productivity (elasticity of labour-capital substitution)
Labour force	Labour supply	Labour productivity
Trade unions	Labour supply	Wage bargaining
Government	Labour supply	Incentives to work, EPL

Summarising these discussions, it seems crucial to verify empirically following links: (i) labour mobility in Europe, (ii) taxation, (iii) nominal wage flexibility, wage negotiations and wage restraint, (iv) the spillovers from product market integration to labour markets in the EU and finally (v) the impact of labour market policies on labour supply and productivity. This is pursued in the next sections.

²¹Consider the following example of a bigger and smaller participants of a monetary union. Local unemployment was partially a pushing factor for Poles (larger country) migrating to Ireland (smaller country). However, providing relatively cheap labour there, these movements might have contributed to the overheating of this economy (stabiliser of labour supply constraint and thus increasing labour costs could not have worked). In principle, one can quite easily determine in what these processes would result for each of the two countries - no visible impact in Poland and a sort of considerable bubble in Ireland. However, impact in the union-wide terms remains indeed undetermined.

3 Empirical findings

When one observes the evolution of the institutional design of triparty negotiations at the EU level, one cannot resist to state that the predictions of the early years of EMU formation did not really materialise. There is no evidence in support of the cross-border wage negotiations, while especially after EU 2004 enlargement reallocations became an important issue on the public agenda. On the other hand, some sort of EU wide negotiations scheme has evolved. National associations of employers formed BusinessEurope representing their interest *vis-a-vis* European Commission. At the same time, national trade unions formed European Trade Unions Committee (ETUC). Both these organisations maintain experts fluent in *acquis communautaire* and able to implement the negotiation process with the European Commission.

European Commission indeed negotiates all EU wide standards concerning employment issues with national governments and with these two supranational institutions, without engaging into country-level disputes. Any internal issues are consistently left at the discretion of national governments while no exceptions were made to this rule. Therefore, one can hardly think - *anno domini* 2008 - why would the European Commission abandon this policy and create forum for centralised supranational bargaining.

Furthermore, the negotiations with ETUC and BusinessEurope concern - predominantly - regulations which enlarge the extent of flexibility in the labour market that the EU Member States virtually have to or are encouraged to implement. Such examples include promotion of flexicurity best practices, monitoring of National Action Plans implementation and introduction of new instruments (recently, the exceptional extensions of week working time, the extension of period over which working time needs to be balanced, etc.). These are regulations which countries are encouraged (sometimes obliged) to subsequently transmit to national regulations. Negotiations concern also issues like undeclared work, cross-national labour mobility, etc. In addition, in most countries the trend of union density decrease continues. Illustratively speaking, mobile telecommunication industry gives currently more jobs in Poland than the entire mining sector.

3.1 Labour mobility

Labour mobility is a potentially important channel of adjustment to asymmetric shocks. Eichengreen (1993), Bayoumi and Prasad (1996) as well as Bentivogli and Pagano (1999) find that migration flows in Europe tend to be less responsive to economic shocks than in the United States. Huber (2004) argues that institutional factors, such as employment protection and the share of owner-occupied housing play an important role in explaining generally low internal migration rates in Europe.

Cavelaars and Hessel (2007) is the most recent attempt to evaluate the extent of labour migrations responsiveness to economic fluctuations across EU Member States. For the lack of comparable data, they follow Decressin and Fatas (1995) in calculating migration flows as residuals from regional data on population, employment and participation rates, using data for 54 European regions over 1960-2003. The adjustment mechanism they diagnose consists of quite immediate adjustment in local participation and activity rates, gradually returning to pre-shock levels, with jobs taken over by inward migration trends. Nonetheless, migration is becoming more important over time, although the pattern is not monotonic. Namely, if regional employment were to increase by 100 people, the migration response after 5 years can be estimated to amount to 12 people in 1970, 23 people in 1980s and 15 people in 1990s. Naturally, there is a significant heterogeneity across EU regions, but in all regions participation and employment are the most important positive and negative shock absorbers in the EU.

These findings suggests two important future directions of research. First of all, it may hold that participation and employment play such a significant role, because the local employment potential was far from being used over the past decades. With growing activity rates - as is the Lisbon Strategy target - the possible adjustments on this side will become limited. One could argue - based on the results of Cavelaars and Hessel (2007), that with time, migration may become more important due to the increase of participation and employment rates.

Second conclusion is of positive nature too. In principle, free movement of people in the EU is a phenomenon of late 1990s, which implies that mobility over the analysed time span was limited to intra-

national movements. Although regional differentiation in asymmetric shock absorption may indeed be the one we should focus on, in the period of recession, moving from one region of a country in down cycle to another region of that same country does not necessarily constitute a viable alternative. With the facilitation of labour force movements (including also EU level coordination in the areas of social security and retirement benefits), these movements may become more important.

Polish experience in this respect may be slightly discouraging on the other hand. Namely, analyses demonstrate, that unemployment is not a pushing factor, (Fihel 2004), while migration itself may contribute to unemployment. Labour mobility observed in Poland is an "isle" phenomenon, with people migrating exclusively where the channels are and not uniformly where the needs push, (Kaczmarczyk and Tyrowicz 2008). All surveys suggest that more than 50% of migrants was employed (or had other source of income, like temporary jobs) at the eve of leaving home country, while Polish "new migration" (predominantly concerning the UK and Ireland) frequently consisted of graduates without prior labour market experience but with relatively good prospects. These facts seem to suggest, that even if mobility is high by European standards, it may indeed occur along the mechanisms different from the ones suggested by optimal currency area theory²².

3.2 Taxation

There is empirical evidence – though it is not always very strong – according to which both income taxes and payroll taxes will have a negative effect on labour demand. This is because incidence of labour taxes would seem to be levied on both sides of labour markets. In addition, income tax progression seems to have a wage moderating effect, which will boost employment. Usually the argument has been that tax progression can only be justified from equity (*i.e.* income distribution) point of view so that there is a tradeoff between equity and efficiency aspect of labour taxation. In imperfectly competitive labour markets, however, progression also increases the efficiency of the working of labour markets so that from the society point of view it may be justifiable even without income distribution considerations. Finally, there is also some evidence that the structure of labour taxation matters for wage determination and employment.

Nickell and Layard (1999) and Nickell (1999) have used data from 20 OECD over the period 1983–1994. In their research they also controlled for other potential variables which might affect unemployment. They suggest that there is some overall adverse tax effect on unemployment and labour input, while its precise scale remains elusive. Daveri and Tabellini (2000) have studied the effects of labour taxes on labour demand and unemployment by using panel data from OECD countries over the period 1965–1995. This allows them to simultaneously exploit the time series and cross-country variations of the data and to distinguish among countries on the basis of their labour market institutions. According to their estimates, the observed rise of 14 percentage points in labour tax rates between 1965 and 1995 in the EU could account for a rise in EU unemployment of roughly 4 percentage points.

Honkapohja and Koskela (1999) have used industry data from Finland to study the effect of income and payroll taxes on wage setting on the one hand and the role of gross wages on labour demand on the other hand. They analysed the effects of effects of the incidence of the changes in the income and payroll tax on the nominal wage setting across Finnish industries by using the annual data over the period 1960–1997. Applying SURE methodology they obtained results of -0.21 for the average elasticity of the nominal wage rate changes with respect to changes in the payroll tax rate, while the corresponding figure with respect to the changes in the inverse of income tax is -0.56. Hence while the incidence of income tax seems to be distributed roughly evenly between both parties of the labour markets, the incidence of the payroll tax would seem to fall more on employers.

Finally, there is evidence which lies in conformity with the hypothesis according to which higher tax progression will moderate wage formation. This was confirmed for Italy (Malcomson and Sartor 1987), United

²²Please note, that in some cases migration may actually turn out to be procyclical. Recent flows from Poland to Ireland reinforced the overheating of the Irish economy at the same time relieving the labour market recovery in Poland. Instead of dampening the asymmetries (both economies were evolving faster than the EU average), it might have contributed to higher volatility in both these countries.

Kingdom (Lockwood and Manning 1993), Sweden (Holmlund and Kolm 1995) and Finland (Tyrvaïnen 1995), (Honkapohja and Koskela 1999). The evidence from Denmark is much weaker. Lockwood, Slok and Tranaes (2000) have studied the effect of tax progression on wage formation by using Danish earnings data disaggregated by occupation, gender and earnings level. Their result is that whether tax progression moderates or exaggerates wage pressure is income dependent (the higher the income, the more of moderation may be observed).

For Poland, interesting results were obtained from the SIMPL simulation model. Haan and Myck (2007) use the simulations calibrated to Polish households data to predict the labour market effects of social transfers reform, while Bargain, Morawski, Myck and Socha (2006) do it for taxation schemes. They suggest that the reduction of the tax wedge that occurred over the past years (the mean value of average tax rate on labour earnings fell from 41.3% to 33.1% average tax rate) may have significant effects on labour supply, while Myck and Morawski (2008) suggest that the reduction is unprecedented for the whole period of transformation in Poland, thus constituting a significant, positive shock to the economy²³.

3.3 Nominal wage flexibility

How monetary policy can influence nominal wage flexibility? There are two arguments. First, low inflation means only small difference to zero nominal wage growth, because productivity growth is essentially the same as income growth. Secondly, low inflation means incentives for longer wage contracts due to lower uncertainty and less need for frequent adjustments. Ball, Mankiw and Romer (1988) find that low inflation increases real output effects of nominal shocks, which is equivalent to stating that nominal wage flexibility is reduced. Soskice (1990) demonstrates that coordination on higher levels centralisation leads to lower unemployment, but this study is a clear cross-country analysis without any time dimension, which implies that the estimates may be due to some unaccounted (unobserved) heterogeneity of countries. On the other hand, Calmfors (1998) finds no relationship between sacrifice ratio and monetary regime, where sacrifice ratio is the ratio between increase in unemployment and the reduction in earnings growth. He uses the incidences of 1988-1991 and 1992-1995 contractions to illustrate this argument showing that actually no clear pattern emerges. All these studies employed rather unsophisticated empirical techniques, which constitutes a serious limitation if one wants to approach such a refined problem.

Using ECM with long-term data Peeters and den Reijer (2002) estimate the wage equations for Germany, France, Spain, the Netherlands and the United States over the period 1970-2001. To avoid the negative effects of endogeneity, they employ three-stage least squares, instrumenting lagged values for wage determinants, including labour productivity, value added and consumer prices, taxes, unemployment and replacement ratios. They obtain models of considerable explanatory power (with the R^2 between 0.84 and 0.96), which provide them with inputs for calculation of wage elasticities. This, in turn, allows to decompose the changes in wages into main components of changes, including the role of labour productivity, wage bargaining standards and unemployment.

The conclusions of Peeters and den Reijer (2002) are quite encouraging in a sense, that the dominant role of prices in the formation of wages in the seventies and eighties was taken over by labour productivity in the US and unemployment in Spain and the Netherlands at the end of the nineties. Particularly in Germany, towards the end of the period the contribution of labour productivity is pronounced. The effect of unemployment is more than proportional in the case of Spain as well as marginally France and the Netherlands²⁴.

²³A similar exercise - although using a different methodology - was applied to Czech labour force by Galuscak and Pavel (2007). They find high net replacement rates for individuals from households with a working partner, who tend to have the lowest unemployment rates and experience shorter unemployment spells in comparison with individuals from other household types. They also found that net replacement rates decreased only moderately over 1996-2006 time span, while for low wage earners they were significantly shaped by social assistance, with housing benefit constituting an important source of income for poor households with children.

²⁴Interestingly, Peeters and den Reijer (2002) were unable to confirm the conventional wisdom of US labour markets being more elastic than the European ones. This puzzling result was first found in (Layard, Nickel and Jackman 1991).

Since there is a variety of approaches to analysing nominal wage flexibility, Clar, Dreger and Ramos (2007) decided to perform a meta analysis of results. They reach the conclusion of considerable publication bias (preference for results indicating a reaction of wages to unemployment predicted by economic theory). They empirically demonstrate that choosing a particular database with a certain frequency and definition of variables and a given level of territorial detail, using a certain econometric technique or including some control variables, can have significant effects on empirical results. Also, evidence on the role of some institutions in explaining wage responses to labour market conditions (trade union density, employment protection legislation, bargaining coordination, ALMPs as well as tax wedge) imply a lower response while some others (replacement rate or bargaining coverage) do not.

3.4 Wage negotiations coordination

There has been a number of studies addressing the impact of the coordination (and/or centralisation) on the wage negotiations outcomes. They typically resorted to the theoretical model of Calmfors and Driffill (1988) trying to disentangle the effect of the differentiation in the type of negotiations implemented across countries on the effectiveness of these labour markets - see Table (3). In addition, two recent studies find some support for the view that more coordination could promote nominal wage flexibility. According to Driffill (2006), the responsiveness of nominal wage changes to unemployment has decreased in countries that have moved from high to intermediate bargaining coordination (e.g. Finland, Spain and Sweden), whereas it has increased in countries that have moved in the direction of more coordination (e.g. Norway and Italy). Groth and Johansson (2004) found that a move to higher bargaining co-ordination reduces the length of wage contracts at low levels of co-ordination, but that it increases it at high levels of co-ordination. Also European Commission inquired this relation for EU Member States, essentially confirming the hump-shape relationship, but only conditional on including in these analyses a gross replacement rate, (EC 2004).

Table 3: Bargaining coordination and unemployment^a

Study	Intermediate bargaining	Coordinated bargaining	Measure of bargaining structure ^b	Relation
Zetterberg (1992) ^c	2.6	-1.5	Centralisation	Hump-shaped
Bleaney (1996) ^d	3.5	-2.1	Centralisation/coordination	Hump-shaped
Scarpetta (1996) ^e	0.9	-12.0	Centralisation	Hump-shaped
Elmeskov, Martin and Scarpetta (1998) ^f	1.3	-2.4	Centralisation	Hump-shaped
Elmeskov et al. (1998) ^g	1.2	-4.4	Centralisation/coordination	Hump-shaped
Elmeskov et al. (1998) ^h	6.9	-4.6	Coordination	Hump-shaped
Daveri and Tabellini (2000) ⁱ	5.8	-7.2	Geographical	Hump-shaped
Average for hump-shaped	3.2	-4.9		
Layard et al. (1991)	-4.7	-10.4	Coordination	Monotonic
Zetterberg (1992) ^k	-0.4	-2.4	Centralisation	Monotonic
Scarpetta (1996) ^l	-6.2	-12.3	Coordination	Monotonic
Bleaney (1996) ^m	-2.0	-12.3	Coordination	Monotonic
Elmeskov et al. (1998) ⁿ	-0.8	-5.7	Coordination	Monotonic
Nickell and Layard (1999) ^o	-4.6	-6.0	Coordination	Monotonic
Blanchard and Wolfers (2000) ^p	-4.4	-8.9	Centralisation	Monotonic
Average for monotonic	-3.3	-7.1		

Table after (Calmfors 2001b) and own compilation. *Notes:* ^a The table shows how the unemployment rate under intermediate and high co-ordination differs from that under low coordination when other factors are controlled for. ^b Measures of centralization capture the level at which actual bargaining takes place. Measures of co-ordination try to capture informal co-ordination as well. ^c Equation (5) in Table 4.14. We have classified the countries ranked 1-3 and 7-9 as centralized, the countries ranked 13-17 as intermediately centralized and the countries ranked 4-6 and 10-12 as decentralized. ^d Equation (4) in Table 5. Bleaney (1996) distinguishes between highly centralized systems, highly decentralized systems, moderately centralized systems with a high degree of corporatism and moderately centralized systems with a low degree of corporatism. In my table, the last two categories have been amalgamated to one. ^e Equation (8) in Table 1. The entry for intermediate centralisation refers to the country ranked 14 and the entry for co-ordination to the country ranked 1. The comparison is with the country ranked 17. ^f Equation (2) in Table 2. ^g Equation (4) in Table 2. ^h Equation (4) in Table 4. In the equation, taxes and bargaining co-ordination are interacted. The effects are evaluated at the average tax ratio for the sample period 1983-95. ⁱ Equation (5) in Table 9. In the equation, taxes and bargaining co-ordination are interacted. The effects are evaluated at the average tax ratio for 1983-95. ^j This study associates the Scandinavian countries with high co-ordination, the European continental countries with intermediate co-ordination, and the Anglo-Saxon countries with low co-ordination. ^k Equation (3) in Table 4.14. I have classified the countries ranked 1-5 as highly coordinated, the countries ranked 6-10 as intermediately coordinated, and the countries ranked 11-17 as uncoordinated. ^l Equation

(2) in Table 1. ^m Equation (1) in Table 5. ⁿ Equation (1) in Table 2. ^o The equation explains the log of the unemployment rate. In the calculation of the effect on the unemployment rate, I have assumed that unemployment under decentralization is equal to the average rate of unemployment among the countries studied during the estimation period. ^p Equation (1) in Table 1. In the equation, macroeconomic shocks and the degree of bargaining coordination are interacted. The entries show the differences in the increase of unemployment between the post-1995 period and the 1960-65 period.

The development towards more decentralization could also be seen as an outcome of "bargaining" between unions and employers about the level at which wage negotiations should take place. To the extent that the relative bargaining strength of employers has increased, they may have been able to shift the locus of wage bargaining in their preferred direction (Calmfors, Forslund and Hemstroem 2002). One possible reason for such a shift in bargaining power is the increasing degree of capital mobility, which gives the employer side a better "fall-back" position in the case of disagreement with unions. Another argument is that average union density in Western Europe has declined from 44% in 1979 to 32% in 1998 and 26% in 2006 - see Table (4). At the same time, it has been argued, consolidation in EU economies was taking place (Buch, Doepke and Stahn 2008). Thus, employers were becoming "bigger", while trade unions "weaker".

Table 4: Trade union densities in EU Member States

Trade union density (%) in OECD countries, 1960-2002																		
Year	AT	BE	CZ	DE	FI	FR	DE	EL	HU	IL	NL	PL	PT	SK	ES	SE	UK	EU15
1960	60,0	38,9			31,9	19,6	34,7			28,0	41,7					70,7	40,4	24,7
1961	59,5	38,7			31,5	20,2	34,2			47,1	41,1					71,0	40,1	24,8
1962	58,9	37,6			35,3	19,1	33,8			44,5	40,4					71,5	40,2	25,2
1963	59,3	39,0			37,4	20,1	33,4			44,0	40,4					66,1	40,3	26,1
1964	58,9	38,8			37,0	19,7	33,1			44,9	38,9					66,7	40,3	26,6
1965	58,5	39,1			38,3	19,5	32,9			48,2	38,7					66,3	40,3	25,5
1966	58,2	39,5			39,6	18,9	32,5			48,3	39,4					65,9	39,7	25,3
1967	57,6	39,8			40,7	19,1	32,8			48,8	39,7					67,5	40,2	25,3
1968	62,1	40,1			41,0	20,4	32,2			49,6	38,7					67,9	40,5	31,4
1969	63,1	40,8			47,5	22,2	31,7			51,3	37,5					68,5	41,7	33,0
1970	62,8	41,4		60,3	51,3	21,7	32,0			53,2	36,5					67,7	44,8	37,0
1971	61,9	43,4		62,2	56,2	21,6	32,1			53,2	36,2					70,0	45,3	39,7
1972	61,0	46,1		61,5	60,8	21,6	32,4			53,6	36,6					71,4	46,2	41,8
1973	60,8	47,6		62,2	61,4	22,1	32,4			53,3	36,2					72,5	45,5	43,3
1974	57,9	49,0		65,2	63,2	21,7	33,7			53,9	36,0					73,5	46,4	46,2
1975	59,0	51,8		68,9	65,3	22,2	34,6			55,3	37,8					74,5	48,3	48,0
1976	59,2	52,6		73,0	67,6	21,4	35,1			56,3	37,1					73,9	49,4	50,5
1977	58,6	53,5		74,1	66,4	21,4	35,2	35,8		57,0	37,2					76,0	51,1	49,8
1978	57,6	53,1		77,8	66,9	20,7	35,5			57,6	37,0		60,8			77,0	51,8	50,4
1979	56,7	53,8		77,1	68,1	19,2	35,3			57,5	36,6		60,0			77,3	51,6	49,7
1980	56,7	54,1		78,6	69,4	18,3	34,9	39,0		57,1	35,3		59,7			78,0	50,7	49,6
1981	56,4	53,4		79,9	68,3	17,8	35,1	38,8		56,6	33,5		61,8		7,4	78,3	50,5	48,0
1982	53,8	52,1		80,2	68,4	17,0	35,0	38,4		56,1	32,8		61,1		8,4	78,9	48,7	46,7
1983	53,6	51,9		80,8	68,8	16,0	35,0	38,6		57,2	31,3		57,8		8,9	79,6	48,0	45,5
1984	52,1	52,0		79,3	69,0	14,9	34,9	38,0		57,0	30,0		56,3		8,6	80,8	47,5	45,3
1985	51,6	52,4		78,2	69,1	13,6	34,7	37,5		54,2	28,7		54,6		8,9	81,3	46,2	42,5
1986	50,6	51,5		77,4	70,0	12,5	33,9	37,2		51,6	27,3		51,4		8,6	82,5	44,8	40,4
1987	49,6	51,6		75,0	70,7	11,9	33,3	36,3		50,2	24,9		47,7		9,1	82,4	44,5	40,0
1988	48,9	51,4		73,8	72,3	11,2	33,1	34,9		50,5	24,7		42,3		9,6	81,4	42,6	39,8
1989	48,0	52,4		75,6	73,0	10,7	32,4	33,7		51,8	25,1	49,5	37,6		10,0	80,7	40,6	39,4
1990	46,9	53,9	78,8	75,3	72,3	10,1	31,2	32,4		51,1	25,5	48,0	31,7	78,7	11,0	80,0	39,3	38,8
1991	45,5	54,3	72,0	75,8	74,4	10,0	36,0	32,4		51,2	25,6	45,0	31,5		14,7	80,1	38,5	38,7
1992	44,3	54,3	66,0	75,8	76,8	10,2	33,9	32,0		51,3	25,2	40,0	29,0		16,5	82,9	37,2	38,9
1993	43,2	55,0	61,6	77,3	78,8	10,1	31,8	31,1		50,0	25,9	35,0	28,6		18,0	83,9	36,1	39,2
1994	41,4	54,7	50,0	77,5	78,0	10,0	30,4	30,3		48,6	25,6	30,0	27,3		17,6	83,7	34,2	38,7
1995	41,1	55,7	46,3	77,0	79,2	9,8	29,2	29,6	63,4	47,1	25,7	32,9	25,4	57,3	16,3	83,1	34,1	38,1
1996	40,1	55,9	42,0	77,4	78,8	9,8	27,8	28,9	50,0	45,4	25,1	28,0	24,8		16,1	82,7	33,2	37,4
1997	38,9	56,0	38,0	75,6	79,4	9,8	27,0	28,6	40,0	44,4	25,1	26,0	24,3		15,7	82,2	32,1	36,2
1998	38,4	55,4	36,0	76,8	77,7	9,8	25,9	26,7	32,8	42,4	24,5	24,2	23,3		14,9	81,3	31,5	35,7
1999	37,4	55,1	34,0	76,3	77,4	9,8	25,6	26,1	28,0	40,6	24,6	20,0	23,5		14,5	80,6	31,4	36,1
2000	36,5	55,6	30,0	74,4	76,2	9,7	25,0	26,0	22,0	37,8	23,1	17,0	23,5		13,9	79,1	31,2	34,9
2001	35,7	55,8	27,0	73,8	77,8	9,6	23,5	25,4	19,9	35,9	22,5	14,7	23,4		13,8	78,0	30,7	34,8
2002			25,0				23,2				22,1				36,1	78,0	30,4	34,0

Source: OECD Job Study.

A natural conclusion from the theoretical wage bargaining models is that if wage settlements were coordinated throughout the euro zone, wage setters would internalise the anticipated monetary policy reactions of the ECB. One could therefore expect more moderate wage claims contributing to lower inflation

expectations and higher equilibrium employment. However, it seems that we do not observe such evolutions for the time being. Both trade unions and employers associations negotiate with the European Commission, but not that much over wages. Both ETUC (European Trade Union Committee) and BusinessEurope (association of national employers associations) participate actively in shaping the institutional design of the labour market in general rather than wages in particular. Therefore, developments of the last decade suggest one could expect indirect changes - institutional determinants of equilibrium unemployment - instead of direct influences - nominal wages. Consequently, it is possible that European labour markets will gradually observe more (and coordinated!) flexibility.

3.5 Wage restraint

There are a few studies that point to larger nominal wage flexibility in some countries after joining the ERM than earlier, but there are also studies that do not find such an effect (Eichengreen 1998). In general, it has not been possible to show that a larger nominal demand shocks are accompanied by more nominal wage and price flexibility, (Ball et al. 1988), (Layard et al. 1991).

With a high degree of coordination, the incentives for wage restraint may be very strong anyway, because other negative externalities of high wages are internalised, so anticipated monetary policy reactions may then not make much difference, (Coricelli, Cukierman and Dalmazzo 2000), (Soskice and Iversen 2000). Iversen (1998) did indeed find such a pattern, but the results of Hall and Franzese (1998) and Cukierman and Lippi (1999) give only partial support for these theoretical predictions. The results of Hall and Franzese (1998) support the view that higher central bank independence increases unemployment at low levels of bargaining co-ordination, but that this effect becomes smaller at higher levels of coordination (and is possibly reversed at very high levels). Cukierman and Lippi (1999) suggest that higher central bank independence reduces unemployment with intermediate co-ordination, but raises it with decentralization.

Indeed, wage bargaining institutions and practices vary substantially across Euro zone countries. Posen and Gould (2006) analyse wage restraint changes subsequent to EMU. They noted that majority of empirical studies was organised around the issues of macroeconomic outcomes (inflation, unemployment or both), while the theories (as discussed earlier) generate hypotheses about real wage determination as well. Wage restraint - defined as a degree to which wages increases do or do not exceed productivity growth - may serve as a reliable tool of testing the behaviour of real wages across the cycles and changes in exchange rate regimes, including monetary unification²⁵.

Surprisingly, using cross-sectional data it appears that wage restraint is either unchanged or increased following EMU in the vast majority of EU countries, with virtually no cases of sizeable declines. They interpret these results with the notion that EMU is essentially about monetary credibility. It seems that fostering macroeconomic stability from credibility of the central banker, is the main channel through which EMU has so far intervened with the labour market evolutions in the participating countries. Moreover, as they demonstrate, the increase in wage restraint occurred also in the UK and Sweden upon adoption of inflation targeting policy in the aftermath of 1992 crises. In fact, in the sample they analysed, the positive link between monetary credibility (as measured by monthly long term government bond yields averaged for pre-EMU and post-EMU periods) exists for all countries, not only Euro zone members.

Moreover, they find that trade unions coverage (as measured by union density) does not seem to have any explanatory power in this cross country study. In fact, they only turn out significant in interaction with country size, which directly points to the specificity of Germany - the only country in the sample in which wage restraint has increased post-EMU.

²⁵As they note, "wage restraint in some sense automatically controls for country-specific effects and shocks, beyond those directly accounted for in observable labour and monetary institutions" (p.3).

3.6 Product market integration spillovers

With product market integration, product demand should become more price-elastic, but essentially no evidence favouring this hypothesis exists. On the other hand, product market integration in the form of an expansion of European multinationals could still create incentives for wage moderation, because these firms can credibly threaten to relocate production among units in different countries in the case of wage pressures at a specific production site.

An important context to these considerations has been provided by recent evolutions after 2004 EU enlargement. Two issues have emerged on a political arena: first was opening labour markets to CEECs migrants and allowing firms to reallocate to the East of Europe. Both gained public attention (sometimes demagogic), emphasising the importance of industry wage bargaining. In closed economies individual firm-level incentives for wage restraint are weakened because all domestic competitors are exposed to similar wage increases. With the opening to trade, incentives for wage restraint grow naturally in face of the global price competition. However, this tendency is further reinforced with the possibility to reallocate, because labour costs may be moderated not only by domestic wage restraint but also *via* benefiting from within EU differences in unit labour costs. Even if medium term, these gains may indeed be considerable.

3.6.1 Global economic model

Schule and Everaert (2006) perform simulations with the IMF's Global Economy Model, calibrated to the European Union. They suggest that there are sizable long-term gains in output and employment from boosting competition in product and labor markets²⁶. They find that in fact the elimination in labour market imperfections leads to positive outcomes of all economic indicators (real GDP, consumption, etc.). Coordinating reforms across these markets in a given country is found to be beneficial: it reduces transition costs in the short run and generates synergies in the long run. However, to prevent a temporary fall in euro area consumption, synchronization across countries is needed if they are to benefit from a monetary policy reaction. In fact, Schule and Everaert (2008) note that Lisbon Strategy with its refinement is the first international effort to coordinate labour market reforms, while its impact is seizable (at least basing on the micro-level evaluations).

There are two main problems with the approach in (Schule and Everaert 2006) and (Schule and Everaert 2008). The effect is not homogenous in size for all countries, while in all cases the result is less than proportional. Secondly, they assumed very large changes in the labour and product market reforms (they reduce markups by 16-22% in labour markets, 15-17% in the non-tradeable sectors and 5-7% in tradeables). Although they suggest they took the "adequate" markup values²⁷. However, these reductions essentially imply that *entire* room for reform was successfully used. We have already discussed in detail theories suggesting to what extent EMU effectively provides incentives to the governments to incur the political costs of changing labour market institutions. Although strong empirical evidence is lacking, even Schule

²⁶Global Economic Model assumes monopolistic competition on both product and labour markets. These models combine microeconomic foundations with sticky prices, nominal rigidities, trade and international financial markets. GEM calibrates economies in a global context (taking into account also cross-national elasticities). This model serves the purpose of simulating the effect liberalization of either product or labour markets would have on main macroeconomic indicators (real GDP, consumption, interest rates, wages, etc.).

²⁷Traditionally, estimates of markups were made separately for product and labor markets respectively, (Martins, Scarpetta and Pilat 1996) and (Jean and Nicoletti 2002). However, there is theoretical justification (Blanchard and Giavazzi 2003) and abundant empirical evidence of a positive relation between goods market rents and wage premia over market clearing wages (among others: Konings, Van Cayseele and Warzynski (n.d.), Jean and Nicoletti (2002), Crepon, Desplatz and Mairesse (2002), Saint-Paul (2004), Dobbelaere (2005)) Recent joint estimates of product market markups and bargaining power by labor indicate much higher product market markups than traditional estimates, which omitted the part of the firm's rent captured by workers. Workers' rents can assume various forms: wage premia, higher non-wage benefits, and more favorable general work conditions. All of them raise the cost of labor per unit of output. Hence, they estimate the model calibrated to product markups from such joint estimates. The average values of joint markup estimates were very high (29% on labour in Belgium, 21% on tradeables in France and 45% on nontradeables in New Member States). However, recent estimates by Gradzewicz and Hagemeyer (2007) suggest that these numbers are excessively high.

and Everaert (2006) themselves admit, that the main *spiritus movens* behind implementing the labour market reforms is the Lisbon Strategy and the coordination efforts by European Commission for all EU members - not that much initiatives of cooperation undertaken by EMU members.

3.6.2 Regionalisation instead of national aggregation?

Head and Mayer (2006) analyse regional market potential across 57 European regions inquiring whether regional market potential may be explained by the differences in labour and other structural conditions. Regional market potential is defined as a weighted sum of importer fixed effects estimated in a bilateral trade equation, extending Redding and Venables (2004) by incorporating industry instead of consumption (thus obtaining industry, time and country specific measures).

They find that real market potential indeed varies across regions. More importantly, wages - although they respond to the changes in real market potential - transmission is very differentiated in magnitude. On the other hand, on average employment demonstrate no response with some countries and industries suggesting employment contraction and other employment expansion as an effect of real market potential changes. Especially this last conclusion suggests strong rigidities in some industries and relatively weaker ones in others.

3.6.3 International rent sharing and domestic labour markets

The role of financial integration in improving risk sharing through reducing macroeconomic volatility is well founded in modern international macroeconomic theory. Risk sharing, which implies higher international consumption correlations than output correlations, is intuitively linked to financial integration on the premise that if output risks are to be internationally shared, there should be some trade in financial assets among residents of different countries. Trade in financial assets is the defacto definition of financial integration and hence the link. Recent studies that have considered the role of financial integration on risk sharing include, among others, Suzuki (2008), Bai and Zhang (2006), Zhou (2006) and Kose, Prasad and Terrones (2003). In theory, financial integration should help the financially integrated countries better manage output and consumption volatility Prasad, Rogoff, Wei and Kose (2004). Theoretical contributions suggest that the feasibility of international consumption smoothing in the EU actually depends on the existence of, and actual trade in, debt and equity instruments - (Sorensen and Yosha 1998). Trade in equity, which can allow economies to swap equity shares or claims to output as measured by GDP, should result into smother income and consumption over time Zhou (2006).

Despite the whole discussion on whether monetary integration may indeed foster trade and FDI²⁸. Jansen and Stokman (2004) analyse the impact of international rent sharing on the wages across EU countries. The basic theoretical prediction would suggest that an increase in foreign profitability should positively affect wages as well as possibly employment in the domestic firm, and thus in the domestic economy. They use data on six largest recipients of direct investment capital (United States, the United Kingdom, Germany, France, the Netherlands and Belgium²⁹) over the period of 1982-2000.

²⁸The effects of exchange rate volatility on trade are ambiguous. In particular and perhaps contrary to intuition, it is not certain that exchange rate volatility must reduce trade. Empirically, the results are also ambiguous and depend - among other things - on methodology employed. Early research based on time series estimation produced contradicting results. More recent research based on modern time series methods delivers results that are less ambiguous; most of the studies estimate negative and substantial effects both in the short and the long run, (Bini-Smaghi 1991) and (Chowdhury 1993). In Europe, however, Flam and Jansson (2000) aimed at examining the partial effect of the nominal exchange rate volatility on exports from each EMU member state to the rest of the zone (time series from 1967 to 1997). The long run relations between exchange rate volatility and exports turned out to be mostly negative but in vast majority of cases insignificantly different from zero. Enthusiasts of currency union concept treat them as the ultimate credible commitment to stable monetary policy. It is possible that by minimising transaction costs, and thus raising income, the resulting increase in GDP will cause eventual increase in trade, as indicated in Frankel and Rose (1998).

Their empirical approach consists of estimating equations for real wages and the aggregate employment with variables capturing international rent sharing. They find that employment in Belgium and Netherlands positively responds to the improvements of foreign profitability, but wages do not while the reverse pattern only with longer delay holds for France, Germany and the UK. This study was performed on aggregate level, which implies that findings may be stronger if industry data were employed.

3.7 Labour market policies

The key objectives of the European Employment Strategy include raising employment rates, reducing unemployment and increasing labour market adaptability. The end of 1990s has been characterised by strong economic growth, intense job creation and a substantial decline in unemployment. In the five-year time span between 1997 and 2001 - the total number of jobs grew by slightly more than 10 million, unemployment declined by more than 4 million, while labour force participation grew by nearly 5 million³⁰. This tendency has continued over the next five-year time span, with labour force participation increasing by 9.3 million despite unemployment increase in EU15 by 1.6 million³¹.

Recent work by the Commission services suggests that, although progress has been made towards the achievement of the objectives of increasing employment and reducing unemployment, Member States performances differ and further efforts will be required for reaching the employment rate targets agreed at Lisbon and Stockholm. The Commission services have also established¹¹ that economic growth was translated into more employment growth in the 1990s than in the 1980s in most Member States, (EC 2001)³². In particular, in the second half of the 1990s, structural unemployment, measured by NAIRU, declined for the Union as a whole – the decline amounted to 1.4% since 1997. The decline in the structural component of unemployment went hand in hand with the decline in the rate of long term unemployment (-1.6%). Since 1997 the decline in structural unemployment has accelerated and has been accompanied by intense job creation³³.

Under the Luxembourg process, traditional employment policies shifted generally towards prevention, with consequent reforms of the delivery services i.e. public employment services (PES) across the European Union. In addition, the share of active measures out of total labour market expenditure followed an upward trend. Over the period, and against a background of strong economic growth, long-term unemployment levels have considerably decreased from over 5% of the labour force in 1997 to 3.2% in 2001 and continued to remain at this low level - Table (5). In parallel, the share of long term unemployed in total unemployment was reduced from nearly 50% to below 40% thresholds.

²⁹Together, they host over 70% of all FDI capital in the OECD area.

³⁰Employment grew from 157.5 (1997) to 168,8 million (2001) ; unemployment went down from 17.5 (1997) to 13.2 million (2001); the labour force increased from 166.2 (1997) to 171.1 million (2001).

³¹Employment grew to 176.0 million (2006) while unemployment amounted to 14.5 million (2006).

³²The same conclusion is drawn by the IMF, (IMF 2001).

³³This positive outcome is not explained by cyclical improvements only. Since the mid 1990s the cyclical adjusted employment rate increased continuously while the NAIRU declined steadily (EC 2001). These trends apply in most Member States and also for the low skilled. They are associated with continued increases in the participation rate as required for reaching the Lisbon targets on the supply side, (EC 2001). These results suggest that Europe is on a path of a sustainable increase in the employment rate. However, the levels of improvements reached are far from the Lisbon targets.

Table 5: Long term and youth unemployment in EU Member States

	Long term unemployment rate (% labour force)																										
	BE	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	EU15	
1995	5,8		2,0	3,9		7,6	4,6	10,3	4,3	7,1		0,7					3,1	1,0		3,1	3,1				2,3	3,5	4,9
1996	5,7		1,8	4,2		7,0	5,2	9,4	4,5	7,3		0,8		5,2		3,0	1,2		3,3	3,3	3,4				2,7	3,1	4,9
1997	5,4		1,5	4,7		5,6	5,3	8,7	4,6	7,3		0,9		4,5		2,3	1,3		5,0	3,2	3,4		4,9		3,1	2,5	4,8
1998	5,6	2,0	1,3	4,7	4,2	3,9	5,8	7,5	4,5	6,8	7,9	7,5	0,9	4,2		1,5	1,3		4,7	2,2	3,3	6,5		4,1	2,6	1,9	4,4
1999	4,8	3,2	1,1	4,2	5,0	2,4	6,5	5,7	4,1	6,7	7,6	5,3	0,7	3,3		1,2	1,2		5,8	1,8	3,3	7,8	3,0	3,0	1,9	1,7	3,9
2000	3,7	4,2	0,9	3,8	5,9	1,6	6,1	4,6	3,5	6,3	1,2	7,9	8,0	0,6	3,1	4,4	0,8	1,0	7,4	1,7	4,1	10,3	2,8	1,4	1,4	1,4	3,4
2001	3,2	4,2	0,9	3,8	6,0	1,3	5,5	3,7	2,9	5,7	0,8	7,2	9,3	0,6	2,6	3,7	0,6	0,9	9,2	1,5	3,7	11,3	2,5	1,0	1,3	3,1	3,1
2002	3,7	3,7	0,9	4,0	5,4	1,3	5,3	3,7	3,0	5,1	0,8	5,5	7,2	0,7	2,5	3,3	0,7	1,1	10,9	1,7	3,5	12,2	2,3	1,0	1,1	3,1	3,1
2003	3,7	3,8	1,1	4,6	4,6	1,5	5,3	3,7	3,5	4,9	1,0	4,4	6,0	0,9	2,4	3,2	1,0	1,1	11,0	2,2	3,5	11,4	2,3	1,0	1,1	3,3	3,3
2004	4,1	4,2	1,2	5,5	5,0	1,6	5,6	3,4	3,8	4,0	1,2	4,6	5,8	1,1	2,7	3,4	1,6	1,3	10,3	2,9	3,2	11,8	2,1	1,2	1,0	3,4	3,4
2005	4,4	4,2	1,1	5,7	4,2	1,5	5,1	2,2	3,8	3,9	1,2	4,1	4,3	1,2	3,2	3,4	1,9	1,3	10,2	3,7	3,1	11,7	2,2	1,2	1,0	3,4	3,4
2006	4,2	3,9	0,8	5,5	2,8	1,4	4,8	1,8	3,9	3,4	0,9	2,5	2,5	1,4	3,4	2,9	1,7	1,3	7,8	3,8	2,9	10,2	1,9	1,1	1,1	1,2	3,2

	Youth unemployment rate (% labour force 15-24)																										
	BE	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	EU15	
1995	22,9		9,6	8,9		19,5	28,5	39,7	26,4	30,3		7,2				11,4	5,6		16,5	16,5				29,7	19,1	15,3	20,3
1996	22,1		9,7	9,5		18,2	31,0	39,2	27,9	30,4		8,2		18,5		11,1	6,3		16,7	17,5			28,0	20,5	14,9	20,5	
1997	22,0		7,7	10,0	17,0	15,4	30,8	36,4	27,8	30,2		7,9		17,0		9,1	6,7		23,2	15,1	17,2		25,2	20,6	13,7	19,6	
1998	22,1	12,8	7,3	9,1	15,2	11,3	29,9	33,1	25,1	29,9	26,8	25,5		6,9	15,0	7,6	6,4		22,5	10,7	17,8	25,1	23,5	16,1	13,1	18,1	
1999	21,1	17,7	9,1	8,1	22,0	8,6	31,5	27,3	22,9	28,7	23,6	26,4		6,9	12,6	6,8	5,4		30,1	9,1	17,6	33,8	21,4	12,3	12,7	16,4	
2000	16,7	17,8	6,2	7,5	23,9	6,8	29,1	24,3	19,6	27,0	10,1	21,4	30,6	7,1	12,4	13,7	5,7		35,1	8,8	16,3	36,9	21,4	10,5	12,1	14,8	
2001	16,8	17,3	8,3	7,7	23,2	7,3	28,0	23,2	18,9	24,1	8,1	23,0	30,9	7,1	11,3	18,8	4,5		39,5	9,4	17,8	39,2	19,8	10,9	11,7	14,1	
2002	17,7	16,9	7,4	9,1	17,6	8,5	26,8	24,2	19,3	23,1	8,1	22,0	22,5	7,7	12,7	17,1	5,0		42,5	11,6	16,5	37,7	21,0	11,9	12,0	14,6	
2003	21,8	18,6	9,2	9,8	20,6	9,1	26,8	24,6	19,1	23,7	8,9	18,0	25,1	11,0	13,4	17,2	6,3		41,9	14,5	17,3	33,4	21,8	13,4	12,2	15,3	
2004	21,2	21,0	8,2	11,8	21,7	8,9	26,9	23,9	20,4	23,5	10,5	18,1	22,7	16,8	15,5	16,8	8,0		39,6	15,3	16,1	33,1	20,7	16,3	12,1	15,9	
2005	21,5	19,2	8,6	13,9	15,9	8,6	26,0	19,7	21,0	24,0	13,0	13,6	15,7	13,7	19,4	16,4	8,2		36,9	16,1	15,9	30,1	20,1	21,1	12,9	16,3	
2006	20,5	17,5	7,7	12,5	12,0	8,6	25,2	17,9	22,1	21,6	10,5	12,2	9,8	16,2	19,1	16,3	6,6		29,8	16,3	13,9	26,6	18,7	21,3	14,1	15,7	

Naturally, countries differ significantly in the paths of evolutions. Poland is among the worst performers on this account, together with Slovakia significantly differing from the rest of EU. Starting at much higher levels in the mid 1990s, Ireland and Spain managed to work through the problem of long unemployment spells. The main instruments included increasing the coverage of active labour market policies and additional incentives to the employees. However, there are stark differences in the effectiveness of these instruments between Ireland and Spain - whereas in the former workers returned to the labour market, in the latter large exits were observed.

Within CEECs, an interesting benchmark for Poland and Slovakia is Hungary, whose starting level in mid 1990s was comparable to these two countries, but the direction of evolution was strongly opposite. It seems that the explanation may be hidden in the differences of the long-term unemployment nature. In all these three countries long spells of unemployment are partially accounted for by the restructuring of the early 1990s, which have not been adjusted subsequently. In Hungary - although in relative terms comparative - in absolute terms the problem has been of smaller magnitude. Consequently, public employment services and other stakeholders were better prepared to address the needs of this group of unemployed. Comparing the vacancy ratios (on average approximately .006 for Poland and 0.21 for Hungary) and a number of unemployed per case worker in public employment services (on average approximately 300 beneficiaries per job seeker in Hungary and 1310 in Poland over this period - EU target standards are set at the level of 40) seems to provide justification to this hypothesis.

In general, higher priority accorded to employment issues is evident in the way in which national parliaments have been involved in the NAP process. Although involvement is, in most cases, still confined to formal information, more thorough consultation and discussion can also be observed (Denmark, Finland and the Netherlands), however, this better quality of involvement does not yet extend beyond the institutional circles of employment and social affairs committees. In Denmark for example, in order to strengthen coherence, there has been a regrouping of two administrations involved with the formation of the new government in 2001 the section "active social policy" of the Ministry of Social Affairs and the Ministry of Labour have been merged into a new Employment Ministry. On the other hand, in Italy, where difficulties of applying the EES in the Italian context are strongly emphasised, reports an overhaul in employment policy-making from a 'dirigiste' approach to more flexible policy implementation based on management by objectives, monitoring and mainstreaming. This presupposes stronger interdepartmental co-operation and more co-operation with regional authorities. Finally, in the UK government now places special emphasis on "Evidence based policy making" which implies a continuous evaluation of the main programmes, incorporating views from outside government and joining up policy across government.

A very important context to labour market policies in the EU is given by regionalisation trend in the European funds management. For example, in Belgium regionalised competences have triggered co-operation agreements to implement measures inspired by the European Employment Strategy (*e.g.* "pathways" in the context of the preventive approach). The reverse side of this is a multiplicity and sometimes an overlap of regional and federal measures which calls for a major rationalisation (an EU recommendation along these lines was issued in 2005). In Denmark, the municipalities have recently been involved, since local co-ordination committees to support labour market reforms became compulsory as of 1999. Social partners, local public services, and a variety of NGOs are also members. Their activities concern both employment and social objectives. Local labour market councils are active in discerning (potential) bottlenecks and devising policies to deal with them. Monitoring of the "comprehensive approach", required by the EES and the recommendations has entailed the involvement of the municipalities in the Netherlands too. Finally, France has chosen to achieve regionalisation *via* personalised approach. This last element has been traditionally emphasised in the UK as well³⁴.

Taking into account their different starting points, the majority of Member States have made considerable efforts to comply with the EU prevention targets and the activation target of 20% has been globally reached. Nevertheless, the success of these policies varies strongly between Member States. Significantly,

³⁴(EC 2002) describes in detail actions undertaken in each of the EU Member States - key policy changes in the relation to the EES.

the preventive approach has not reached all persons at risk in each of the Member States. However, observing the evolutions over the last decade in Europe depicted in Table (6), one sees that improvement in labour market outlooks have allowed reductions in labour market policies spendings. At the same time, country-specific characteristics prevail and little convergence may be observed in this respect. Denmark traditionally leads, which denotes the consistency of commitment to the flexicurity model implemented in this country. CEE countries - on the graph only Poland and Czech Republic are depicted, but this is a phenomenon characteristic to all the countries of the region - tend to spend as little as a country traditionally liberal in this respect, the UK. However, unemployment problem is definitely more intense in Poland than in Hungary, Czech Republic or Slovenia.

Table 6: Labour market policies spending (as % of GDP)

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Active labour market policies									
Austria	0,46	0,55	0,52	0,57	0,56	0,62	0,6	0,62	0,71
Belgium							1,15	1,08	1,09
Czech Republic					0,18	0,19	0,25	0,25	0,26
Denmark			2,02		2,02	1,91	1,85	1,88	1,84
Finland	1,15	1,06	0,89	0,82	0,84	0,9	0,95	0,89	0,89
France	1,16	1,22	1,19	1,15	1,11	1,05	0,95	0,9	0,92
Germany	1,16	1,27	1,19	1,15	1,25	1,25	1,15	0,97	0,88
Hungary							0,3	0,3	0,28
Ireland	1,15	1,06	0,95	0,88	0,8	0,71	0,65	0,63	0,61
Italy							0,62	0,56	0,53
Luxembourg					0,29	0,42	0,47	0,51	0,49
Netherlands	1,48	1,51	1,51	1,54	1,6	1,56	1,4	1,33	1,22
Poland								0,42	0,45
Portugal	0,57	0,56	0,61	0,61	0,59	0,66	0,68	0,69	0,61
Spain							0,75	0,78	0,8
Sweden	2,47	2,24	1,76	1,66	1,58	1,25	1,22	1,29	1,36
United Kingdom	0,23	0,24	0,27	0,3	0,34	0,4	0,46	0,45	0,42
Total spendings									
Austria	1,84	1,84	1,67	1,74	1,8	1,99	2	2,13	2,1
Belgium							3,07	2,99	2,9
Czech Republic					0,46	0,5	0,5	0,49	0,49
Denmark			4,41	4,38	4,33	4,57	4,51	4,50	4,51
Finland	3,7	3,38	2,97	2,78	2,86	2,95	2,98	2,79	2,58
France	2,7	2,73	2,57	2,56	2,69	2,78	2,66	2,49	2,32
Germany	3,43	3,38	3,08	3,07	3,39	3,53	3,46	3,31	2,97
Hungary							0,68	0,69	0,64
Ireland	2,63	2,17	1,75	1,6	1,63	1,6	1,55	1,46	1,48
Italy							1,36	1,38	1,32
Luxembourg					0,79	1,02	1,11	1,17	1,08
Netherlands	4,08	3,76	3,49	3,23	3,3	3,46	3,48	3,34	2,68
Poland								1,29	1,18
Portugal		1,36	1,43	1,59	1,74	1,75	1,84	1,98	1,87
Spain							2,24	2,23	2,24
Sweden	4,26	3,88	3,1	2,7	2,6	2,43	2,51	2,46	2,32
United Kingdom	0,64	0,61	0,63	0,64	0,66	0,65	0,65	0,64	0,61

Source: OECD Job Study.

For evaluating the impact of active labour market policies, it is imperative to inquire the effectiveness of these instruments from both micro and macro perspective. The latter was rarely able to demonstrate strong and significant evidence supporting the effectiveness - let alone efficiency - of activation instruments. Jakulj, Jonker and Peeters (2003) for example find no significant impact of job creation schemes as a consequence of government subsidised programmes in the case of the Netherlands. Since the works of Martin (2000) and Martin and Grubb (2001) as well as Heckman, Lalonde and Smith (1999) there have been considerable doubts referring to the adequacy and usefulness of these schemes. Individual case studies of experiments (change of instruments design) of including control groups seem to suggest that ... well implemented policies are quite successful. Good implementation involves adequate addressing, focus on prospects on the labour market instead of its history and individual approach. These instruments do not necessarily have to be expensive, but it is an imperative to incorporate social and civic partners and induce employment services with some financial incentives to focus on effectiveness.

Naturally, analysing the effectiveness of particular instruments needs to encompass the possible selection bias to the activation programmes as well as potential lock-in effects (passivity in job search throughout the programme duration). Addressing these issues in empirical analyses have become feasible with the availability of control groups data (*inter alia* due to the implementation of generalised data warehouses for all unemployed and not just those in treatment) as well as more sophisticated analytical techniques (including propensity score matching which explicitly enables the calculation of average treatment on treated effect). Analyses of this type have been extensively performed for varied activation instruments in Germany subsequent to the so-called Hartz reform. Caliendo and Kritikos (2007) focused on self-employment and start-up subsidies, Rinne, Schneider and Uhlendorff (2007) analyse treatment effects of public training programs on employment prospects, while Lechner and Melly (2007) focus on earnings. All these studies find significant positive effects of activation programmes in Germany. For France, Crépon, Ferracci and Fougère (2007) find although that training does not accelerate the exit from unemployment, it has a significant and positive effect on the duration of the subsequent employment spell. Svarer (2007) finds using Dutch data that even only verbal sanctions on benefit provision (an essentially costless instrument) foster considerably exits from unemployment.

There are also potential backward linkages from passive instruments into the effectiveness of the active ones (for example the eligibility criteria and incentives to move out of unemployment). However, evidence from van den Berg, van der Klaauw and van Ours (2004) suggests that conditionality of welfare - currently a common feature of the legal systems, but not equally frequently used instrument - is able to successfully (and costlessly!) address this problem.

Summarising, active labour market policies are not a magic bullet on their own to solve the unemployment problem. Activation policies which combine high-quality assistance with finding work with pressure on unemployed people to accept it can be effective, but more rapid returns to work sometimes come at the cost of accepting lower re-employment earnings. Active policies can be, and have frequently been, temporarily overwhelmed by increases in the numbers of unemployed that are caused by distinct microeconomic or macroeconomic shocks. On the other hand, fears that active labour market policies have little aggregate impact because the estimated microeconomic impacts on target groups come only at the cost of displacing other workers, do not seem justifiable. Only in the short run is total employment fixed (if one person takes a vacancy, another cannot), so that displacement is complete.

Over the medium run of a few years, aggregate employment plausibly does adjust to changes in effective labour supply, through both direct mechanisms (when vacancies attract many high-quality applications, employers create more vacancies) and indirect mechanisms (unemployment reduces wage pressures, making business more profitable in an open economy or allowing noninflationary expansion of aggregate demand in a closed economy). This suggests that insofar as active labour market policies increase effective labour supply, their displacement effects fade away over the medium term. Significant positive externalities can also arise as initial successes in reducing unemployment make it possible to devote more resources to assisting each person remaining unemployed, resulting in a further fall in unemployment. Declines in equilibrium (or structural) unemployment rates achieved by many OECD countries in the 1990s - thanks to a combination of macroeconomic and microeconomic reforms, including greater attention to the interactions between passive and active labour market policies - give some reasons for optimism.

3.8 The extent of labour market reforms

Based on the OECD Job Study³⁵ one can state that EU countries in general have pursued policies approaching wage flexibility and employment costs. These efforts included in many cases reduction of unemployment benefits coverage (*via* among others conditional transfers) but also working hours flexibility, etc. These changes have been put in the context of shifting from job security to employment security.

³⁵OECD Job Study collects 37 indicators in 14 areas every five years. These indicators are useful, because original country scores include not only the changes, but take into account also initial levels (otherwise, *de facto* best performing countries would *de nomine* gradually perform worse).

The results for EU countries (EMU and non-EMU) is reported in Table (7). The extent of reform efforts is very different across countries, while the areas in which the reforms were undertaken is vary from country to country. A closer, case-by-case analysis reveals that the only change "consistent" across countries

Table 7: Follow through rates of OECD Job Study

Country	Wage formation	Unemployment benefits	Tax wedge	ALMPs	EPL and working time	Average follow-through
EMU						
Netherlands	25	31	100	75	70	60
Ireland	-	72	50	33	-	52
Austria	0	50	25	100	58	47
Belgium	17	63	50	83	13	45
Italy	50	38	50	25	63	45
Finland	0	38	50	75	50	43
Greece	30	50	50	50	25	41
Spain	38	30	-	25	60	38
Germany	0	54	19	33	70	35
Portugal	0	-	50	0	63	28
France	0	-10	50	50	0	18
Luxembourg	-28	-17	-25	100	0	6
Average	12	36	43	54	43	38
Non-EMU						
UK	50	100	100	100	-	81
Denmark	40	44	67	50	100	60
Sweden	0	-20	0	50	50	16
Average	30	41	56	67	33	52

concerns active labour market policies (ALMPs), which have expanded considerably across 1990s. In fact, countries were choosing very different reform paths. Moreover, non-EMU countries seem to have put more stakes into reforming labour markets than EMU participants, performing better in every area with the only exception of EPL and working time arrangements. Table (8) reports the evolutions in the Employment Protection Index over last two decades.

Traditionally, the UK performs lowest (accompanied by Ireland), while France scores highest (together with Portugal and Greece). However, more important than the levels of EPL are the changes underwent by these countries. Recent reforms in the Greek labour markets are partially a follow up of the requirements European Commission raised in retorsions to the lack of integrity on information disclosure on the side of Greek government.

One could ask whether in practice lower EPL scores transmit to higher employment or job creation. Calcagnini and Giombini (2007) analyse the impact of EPL moderation on investment rates across EU Member States using firm-level data. They find that EPL had a negative and significant impact on investment, and that the joint impact of labour market rigidities and capital market imperfections is negative. However, analysing the implications of these results one should keep in mind that some investment may actually be detrimental to job creation.

To see the effect of flexible employment regulations directly on employment we constructed a measure of employment creation due to non-standard employment forms. Table (9) demonstrates that Spain and Poland are definite underperformers in the EU, with Netherlands scoring absolutely highest, creating as much as 16 additional percentage points with the use of the elastic forms³⁶.

³⁶Interestingly, both these countries score highest in self-employment rates. However, this may be partially accounted for by the low participation.

Table 8: Employment Protection Index

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003		
AT	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	2,21	1,93	
BE	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	3,15	2,15	2,15	2,15	2,18	2,18	2,18	2,18	2,18	2,18
CZ									1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
DE	3,17	3,17	3,17	3,17	3,17	3,17	3,17	3,17	3,21	3,09	3,09	3,09	2,46	2,46	2,46	2,46	2,46	2,46	2,46	2,35	2,35
DK	2,21	2,32	2,32	2,32	2,32	2,32	2,32	2,32	2,32	2,32	2,32	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42
ES	3,82	3,82	3,82	3,82	3,82	3,82	3,82	3,82	3,82	3,11	3,11	3,11	2,93	2,93	2,93	2,93	2,93	2,93	2,93	3,05	3,05
FI	2,33	2,33	2,33	2,33	2,33	2,33	2,17	2,17	2,17	2,17	2,17	2,09	2,09	2,09	2,09	2,09	2,02	2,02	2,02	2,02	2,02
FR	2,79	2,70	2,70	2,70	2,70	2,98	2,98	2,98	2,98	2,98	2,98	2,98	2,98	2,98	2,98	2,98	3,05	3,05	3,05	3,05	3,05
UK	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,68	0,68	0,68	0,68	0,75	0,75
GR	3,61	3,61	3,61	3,61	3,61	3,54	3,54	3,54	3,54	3,54	3,54	3,54	3,54	3,54	3,54	3,54	3,54	3,54	3,54	2,83	2,83
IL	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	1,11	1,11
IT	2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,73	2,12	2,12	2,12	2,12	2,12	2,12	2,12
NL	2,90	2,90	2,90	2,90	2,90	2,90	2,90	2,90	2,90	2,90	2,69	2,69	2,69	2,69	2,69	2,56	2,56	2,56	2,56	2,56	2,56
PT	4,19	4,19	4,19	4,19	4,10	4,10	3,85	3,85	3,85	3,85	3,85	3,67	3,67	3,67	3,67	3,67	3,67	3,67	3,67	3,67	3,67
SK	..	..	..	..	..	..	..	..	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,34	1,34
SE	3,49	3,49	3,49	3,49	3,49	3,49	3,49	3,49	2,48	2,48	2,48	2,48	2,24	2,24	2,24	2,24	2,24	2,24	2,24	2,24	2,24
EU15	2,72	2,72	2,72	2,72	2,72	2,73	2,70	2,70	2,54	2,48	2,47	2,40	2,27	2,27	2,23	2,23	2,24	2,24	2,24	2,14	2,14
PL	..	..	..	..	..	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,49	1,74	1,74
HU	..	..	..	..	..	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,27	1,52

Source: OECD Job Study.

Table 9: Employment creation due to flexible forms

	Employment creation due to flexible forms																										
	BE	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	SI	SK	FI	SE	UK	EU15	
1995	2,7		6,6	4,9		3,6	0,5	1,8	2,9	1,2		0,0	0,0	2,1	0,0	0,0	13,3	3,0		1,8	0,0			5,1	7,0	9,3	4,5
1996	2,9		6,8	5,4		3,9	0,4	2,2	2,8	1,2		0,0	0,0	1,8	0,0	0,0	14,2	4,2		2,3	1,1		4,9	7,5	9,6	4,8	
1997	3,0	-0,5	6,8	5,8		4,4	0,7	2,3	3,1	1,2		0,0	0,0	1,6	0,4	0,0	14,4	4,3		3,2	1,7		3,8	7,6	9,7	5,0	
1998	3,5	1,7	7,3	6,2	-0,4	5,0	0,6	2,4	3,3	1,4		1,7	62,3	2,5	0,6	0,0	14,6	4,1		1,7	1,1		4,0	7,9	9,8	5,1	
1999	3,6	1,7	6,3	6,9	-0,1	4,6	0,7	2,3	3,6	1,7		1,6	61,7	2,6	0,2	0,0	14,9	4,7		1,8	1,4		2,2	7,9	10,1	5,4	
2000	3,1	1,8	7,0	7,0	0,9	4,5	0,4	2,4	3,4	2,0		1,7	1,5	-0,3	0,3	0,0	15,4	5,0		1,7	1,3		2,3	7,9	9,9	5,4	
2001	4,1	1,6	6,4	7,2	1,1	5,0	0,3	2,4	2,9	2,1		1,6	1,0	-0,5	0,2	0,9	16,0	5,1	0,5	1,5	1,4		2,4	5,6	9,7	5,4	
2002	4,5	0,7	6,2	7,3	1,1	4,6	0,4	2,3	2,6	1,9		1,2	0,5	-0,4	0,0	0,7	16,3	5,8	0,8	1,2	0,7		2,3	5,5	9,7	5,4	
2003	4,9	0,6	6,7	7,5	1,6	4,9	0,3	2,5	4,3	1,8		1,4	0,7	-0,9	0,1	1,2	16,4	5,7	0,9	1,6	1,7		2,5	5,3	10,0	5,6	
2004	4,5	0,9	7,1	8,4	1,2	5,3	0,6	2,8	4,4	3,3		0,9	1,5	0,9	0,3	1,4	16,6	7,2	1,5	1,4	2,0		2,8	5,9	10,0	6,2	
2005	4,8	0,9	7,8	9,2	1,0	6,6	0,6	4,1	4,7	3,2		1,6	1,0	0,2	0,3	2,8	16,8	7,9	1,7	1,6	1,9		2,9	6,5	9,8	6,6	
2006	5,2	0,9	8,4	9,3	1,0	7,6	1,1	4,0	4,9	3,0		1,7	0,6	0,3	0,1	1,8	17,0	9,2	1,6	1,4	1,6		3,1	6,5	9,6	6,8	

Own calculation based on comparison of employment rate and full time equivalent of employment as percentage of population in working age, as reported by the European Commission. Creation of employment due to flexible forms is calculated for every country as a differential between these two values (employment rate less full time equivalent).

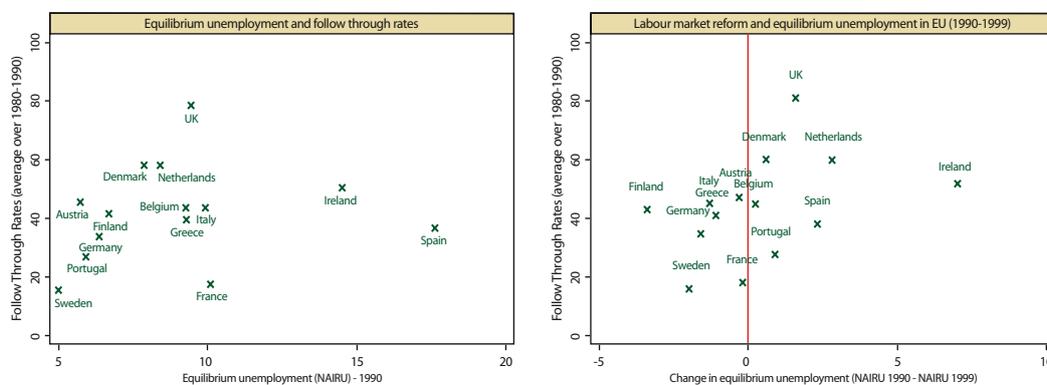
France - a country that started from levels comparable to CEECs currently - managed to achieve the level of additional 3 percentage point due to the extensive use of social economy (fr. *économie solidaire*), so was the case for Italy. Although the effect is moderate - compared to the Netherlands or even UK, Denmark and Austria - it addresses the groups that would surely remain passive otherwise. Evidently - from the cases depicted in Table (9), successful activation requires both these directions. Popular flexible instruments (including part time employment and distance working) need to be accompanied by targeted instruments responding to the barriers faced by the groups experiencing more difficulties on the labour market. This was exactly the mix implemented in the Netherlands, where even a separate methodology for adequate matching of services to the beneficiaries was defined. This methodology bases on specifying individual "distance from the labour market", creating more homogenous groups and facilitating the design of appropriate activation programmes.

From the CEECs perspective, the most urgent question concerns the direction of EPL changes in the nearest future. Although they seem to be to a large extent politically driven, experiences of Sweden, Belgium and Denmark may be especially valuable as policy guidance. Namely, these three countries are widely recognised as welfare states, offering citizens a large degree of income security. At the same time, from the beginning of 1990s, the burden of this security does not rest on the shoulders of employers. Namely, drastic changes in Sweden of 1993, Denmark of 1996 and Belgium of 1998 included significant lowering of the firing costs, elimination of hiring barriers and were coupled with the social coverage from the side of the state. Next section presents some circumstantial evidence as to how successful these efforts were in reducing equilibrium unemployment rate.

3.9 The effects of labour market reforms in EU countries

The study of Elmeskov et al. (1998) reports NAIRU for OECD countries in 1980 and 1990. Using these estimates one can show that - if any - the impact of labour market reforms had is rather moderate and valid for "mid-range" unemployment countries. This is depicted by Figure (3). Based on these results (left panel), Van Poeck and Borghijs (2001) conclude that a weak positive relationship exists between the level of equilibrium unemployment in 1990 and the amount of institutional reform over the 1990s. However, it seems from the inspection of the right panel, that this relationship did not contribute to *lowering* of the equilibrium unemployment rates in as many as seven cases: five EMU (Netherlands, Portugal, Spain, Ireland and Belgium) and two non-EMU (UK and Denmark). On average we clearly observe that non-EMU countries have reformed their markets more over the 1990s and observed higher increases in NAIRUs.

Figure 3: The extent of labour market reform (synthetic indicator based on OECD Job Study)



One could then form the questions about which of the labour market area has contributed mostly to these conclusions. Two of the most intriguing cases are analysed in the subsequent sections.

3.9.1 Case study of Italy and Finland

For example, Italy whose both reform score and equilibrium unemployment reduction is slightly above average focused predominantly on tax wedge and employment flexibility. Finland, with better labour market performance and essentially comparable reform effort focused on active labour market policies, with comparable emphasis on work disincentives, tax wedge and EPL. In fact, Finland focused on activation without "punishment" as well as increasing the flexibility on the side of employers. Koskela and Uusitalo (2004) argue, that these more flexible institutions could have led to a more rapid fall in unemployment from 18% in 1994 to 9% in 2003 thresholds in the once the Finnish economy began to recover in the second half of 1990s.

In addition, over the recent years a new institutional scheme was introduced, namely the personnel fund. Instead of painful negotiations with the nominal wage cuts, increases are moderate, while pools of funds are generated and in the period of economic expansion. In the approved periods of time - general or industry specific contraction - these funds may be used to partially finance the wages. This solution emerged in a country with a highly centralised wage bargaining system. This is an example for how it could be easier to achieve increased nominal wage flexibility through the *ex ante* establishment of an institutional system for contingent pay than through *ex post* negotiations on ordinary wages³⁷.

3.9.2 Case study of Spain, Portugal and the UK

Another interesting cases to compare are the UK with Spain and Portugal. These two southern European countries were generally characterised by strikingly different NAIRU levels (approximately 5% for Portugal and 17% for Spain) in 1990. Spain implemented more and comprehensive labour market reforms over this decade, while Portugal focused on tax wedge and employment protection with virtually no efforts in the area of active labour market policies. In terms of NAIRU reduction both these countries observed 1-2 percentage point changes. The same - rather moderate - improvement was achieved by the UK, who engaged into extensive labour market institutions restructuring, performing indisputably highest in every area defined in the OECD Job Study, while the equilibrium unemployment rate is not low by European standards.

This type of analysis has two important weaknesses. First of all, counterfactual does not exist. It is quite likely that without the reform, UK economy would have experienced more difficulties in the labour market. Secondly, taking the arbitrary time limits may imply that countries are analysed at different moments of business cycle. NAIRU definition of equilibrium unemployment used in the analysis is variable over the economy fluctuations (although it is less volatile than actual unemployment). Since EU business cycles are not synchronised, it is quite likely that this type of analysis does not do justice to the impact of labour market reforms on longer term equilibrium unemployment trends.

³⁷See Halko (2003) for a formalised theoretical model, calibrated simulation results and details on this institutional solution.

4 Conclusions

Some recent evidence suggests that labour market structure may be endogenously dependent on the monetary regime. Abildgren (2008) argues that a credible monetary regime that delivers on the final target of price stability gives a basis for inflation expectations firmly anchored around price stability, which facilitates the use of multi year nominal wage contracts and a higher degree of decentralised wage formation among forward-looking workers and employers. On the other hand, lack of credibility of a monetary regime that results in high and volatile inflation makes shorter wage contracts based on centralised wage bargaining more attractive and encourages the use of inflation indexation of nominal wages. Using over 130 years of data to support this statement, Abildgren (2008) argues that labour market structures to some extent are endogenously dependent on the monetary regime, results and policy conclusions from theoretical models that treats these part of the economy as exogenous might be questionable. Indeed, such a long perspective combined with the little experience Europe has with common currency should suggest humbleness in formulating any policy conclusions regarding the links between labour market institutions and monetary integration. Nonetheless, since "do-nothing" strategy is a policy choice as well, one could try to derive some implications of the theoretical predictions and empirical findings discussed above.

These conclusions focus on two important areas: viability of some policy choices and future research directions. Importantly, although the word "institutions" was used rather rarely throughout the paper, as we suggested in the beginning, for the purpose of this paper any design that affects labour market outcomes is in fact an institution and so are - in our understanding - the characteristics of labour markets, including activity patterns and employment outlooks for specific groups as well as organizational and legal limitations to employer-employee relations.

Considering the first area - policy choices - it seems that the main contribution of the literature up-to-date is that these are not labour market institutions *per se* that make a difference, but rather solutions *with reference* to other currency area members. Importantly, the impact of these solutions and optimality of currency area are highly interdependent issues, linked closely to the question of who is already in the union, but also on how the effective choices of other members evolve with time. In this context, it seems really crucial for countries before euro zone accession to benchmark labour market institutions not that much to the EU average performance as to the one of EMU members. One could also consider differentiated scenarios encompassing the cost-benefit analysis depending on the degree of deviation from average or from the larger EMU countries.

This issue brings about the question of whether incentives to reform are higher on the road to currency area membership or after the accession. Indeed, literature seems to suggest that they may be higher when a country decides to stay outside in a longer term perspective. On the other hand, however, if inflation and stabilisation biases can be smaller upon unioisation, this might have positive forward linkages to the ease of conducting monetary policy during the ERM phase. Therefore, from the point of view of Maastricht convergence criteria prior labour market reform may be helpful for monetary policy. One should keep in mind, however, that relaxing the policy after EMU accession may turn out to be counterproductive, which suggests that eventual reforms should not be overdone.

Another important conclusion from the literature and past experiences is that coordination of labour market reforms in the EU is under the influence of the European Commission and not the European Central Bank. Since political and strategic targets of the EC and Member States are indeed separate from the stabilising targets of the ECB, this may constitute both advantages and challenges for countries on the road to euro zone accession. Namely, empirical research was not able to demonstrate that EMU Member States reformed more than those who opted out (namely UK, Sweden and Denmark). On the other hand, one cannot present a valid argument that those countries, whose reform efforts were more moderate, suffered more from loosing the monetary policy independence. On the other hand, targeting "more and better jobs" by the European Community at large is supported by many differentiated financial and political instruments, thus creating a pressure to endure labour market reforms irrespectively of EMU membership. These benefits and challenges need to be carefully weighted too.

This argument is not necessarily strong for the time being. Van Poeck and Borghijs (2001) point that although EC commences many initiatives supporting structural labour market reforms - with the leading role of European Employment Strategy and National Action Plans - so far no "punishment mechanisms" were imposed. Moreover, eventual evaluation comes from the European Council, which means that ministers in respective countries responsible for NAPs implementations are exactly those who provide their assessment. However, the "social norm" of these evaluations is gradually more focused on the merits than on the politics. In addition, annual "Employment Reports" by the Employment and Social Affairs Commissioner constitute rather clear evaluation of each countries' performance by the EC.

From the above considerations, it is clear that there are still some important "white spots" in the research. An important result (following from Brigden and Thomas (2003), but also Agell and Lundborg (1999), Andersen and Seneca (2008), Calmfors (2001b) and Elmeskov et al. (1998) as well as Van Poeck and Borghijs (2001) is that, it is virtually impossible to write down a single reduced-form relationship linking either the unemployment rate or the inactivity rate (or some combination of the two) to wage pressure. This is because the relationship depends on the source of the shock that has caused either the unemployment rate or the inactivity rate to move. However, this conclusion points to two important directions of future research: (i) linking labour supply to monetary policy and (ii) evaluating the viability of some innovative policy instruments.

Literature has traditionally defined a measure to evaluate the appropriateness of monetary policy as a function of nominal and real deviations from target - usually inflation and output. With the assumption that labour force consists of workers and unemployed, this function may be transformed to encompass inflation rate and unemployment. However, European tradition - emphasised strongly in the Lisbon Strategy - has been to have a third group too, *i.e.* inactive. Recognising this in the literature on the optimality of monetary choices would require redrafting the welfare definitions and explicitly addressing the flows to and from the activity. The second step would be then to calculate the direct and indirect costs and benefits of monetary unification in this context depending on the depth of changes in activity rates as a function of labour market reform.

With reference to policy instruments, many of EMU countries have developed independently institutional solutions which either ease employment consequences of labour market adjustments or facilitate smooth transitions between unemployment and employment. For example, Denmark consistently develops a flexicurity model in which employers bear essentially no costs of adaptation, but security to the workers is assured by a generous redistributive system accompanied by strong, informal, individual incentives to exit unemployment. Finland, on the other hand, decided to ease the situation of employers with the Employment Fund, focusing efforts of public employment services on usually more marginalised groups (elderly or youth). These policy mixes seem to perform reasonably well in both cases, but are fairly intransmittable to other countries for a number of cultural and legal reasons.

However, before new policies may be designed and implemented in other countries, one needs to have at disposal a theoretical and empirical tool that would enable recommending a particular policy mix instead of single policy solutions. One step in this direction was taken by Brown, Merkl and Snower (2007) who provide micro-foundations and simulations of effectiveness for differentiated employment subsidy schemes. One needs more of such analyses with respect to all areas of labour market institutional design.

Labour market institutions - as frequently in economics - are without exception a sort of a two-edged sword. For example, long-term nominal wage contracting transforms disturbances to labour demand into employment fluctuations, but at the same time it provides more stable and more easily predictable wage pressures. Therefore, although traditionally one thinks of flexibility as something inherently good for labour market outcomes, the context of monetary policy and stabilisation in highly heterogenous environment of many countries forming a currency area makes these conclusions more blurred from a theoretical perspective. Thus equivocality is reflected by empirical findings.

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