

A Dynamic General Equilibrium Model for the Analysis of Labour

Market Reforms across the Euro Area

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Motivation

The achievement of the Economic and Monetary Union (EMU) is an important goal for Europe's history and future and, in particular, the common monetary policy of the European Central Bank (ECB) aiming at delivering price stability and financial and monetary integration will definitely foster European well-being in the long run. However, a common monetary framework does not aim at stabilizing each single country in the euro area, but the Union as a whole. In fact, a fundamental assumption on the setting of a common currency area calls for a relevant degree of symmetry across all the participating regions to better cope with adverse shocks which originate both outside the euro area and in the domestic economy.

The potential benefits of a common monetary union can thus be better attained if all the countries can gain from a rapid adjustment to external or country-specific shocks. Indeed, resilience to shocks at the country level can create persistence deviations from the equilibrium condition which cannot be addressed by a common monetary policy, requiring a more drastic adjustment in the future. The overall EMU framework implies restrictions on fiscal policy as well by means of the Stability and Growth Pact.

The dynamics of the labour market, together with the one in external trade and in competitiveness, become a crucial mechanism whereby country can quickly readjust to their long-run path.

In this paper, we focus on the labour market and, in particular, we emphasize the role of structural reforms in the spirit of the *Lisbon strategy for growth and jobs*. The aim of the work is to analyse a set of labour market institutions along two dimensions: the long-run impact on unemployment and productivity and the short-run consequences of providing a more suitable economic environment which can better cope with the effects of negative shocks. Moreover, our modelling strategy will establish a direct link between the dynamics in the labour and the product market which will enhance the understanding of labour market reforms on the inflation dynamics.

The European experience in terms of labour market institutions is quite heterogeneous across euro area countries and there has not been a full comparison of the effects of different policy combinations in a general equilibrium model. The aim of our work is therefore to set a general

equilibrium model which can be used to evaluate the implications of different structural reform policies both on the steady-state equilibrium and on the short-run adjustment dynamics. We focus on the major four euro area countries (France, Germany, Italy and Spain) and we discuss the effects of several labour market policies such as unemployment benefits schemes, employment protection legislation, wage indexation mechanisms and minimum wages. We also model distortionary taxation on wages and we assume the national government uses wages taxes to finance unemployment benefits in order to accomplish a balanced budget.

Modelling Structural Reforms

We setup a dynamic stochastic general equilibrium (DSGE) model which features nominal and real rigidities and therefore allowing for a better description of economic fluctuations and a stabilizing role of monetary policy. The model is along the lines of Christiano, Eichenbaum and Evans (2005) and Smets and Wouters(2007) with monopolistic competitive firms which set prices following the Calvo's (1993) scheme; consumers' utility function displays habit persistence and the capital accumulation process is costly. These modelling features help capturing some regularities in business cycle fluctuation across the major four euro area countries. As far as the labour market is concerned, we introduce a search theoretical approach following Mortensen and Pissarides (1994) which enhances the modelling of equilibrium unemployment together with some institutions such as workers' bargaining power and unemployment benefits. Given some regularities in the European labour market (Bentolila and Bertola (1990) and Blanchard and Wolfers (2000)), we also extend the current search model to include employment protection legislation in terms of firing costs for firms and taxes on wages so that the model can be used to analyze different labour market policy mix. For instance, the main idea behind the inclusion of employment protection legislation is to allow model simulations which account for the stylized facts on the European labour markets. Indeed, Blanchard and Portugal (2001) show how two different economies (the US and Portugal) sharing the same unemployment rate can differ in terms of labour market flows and therefore their ability to adjust to adverse shocks. In the same way, we can verify what happens in economies with different levels of unemployment benefits and employment protection legislation.

Preliminary Results

The results of the paper focuses on the steady-state equilibrium effects and on the short-run adjustment dynamics of labour market policies. The solution method used - first-order Taylor series approximation around the steady-state - does not allow us to analyze transitional dynamics from one steady-state to another: for instance, from a high to a low unemployment level.

After having calibrated the model for the four major economies of the euro area, we have focused on the effects of wages rigidity, unemployment benefits and employment protection legislation. Wage rigidities are very important to amplify the short-run adjustment of unemployment as already stated in Hall (2005). There exists a policy mix of unemployment benefits and employment protection legislation which delivers the same equilibrium unemployment rate, but which has different effects on the volatility and persistence of unemployment. In particular, employment protection legislation reduces the volatility and increases the persistence of the adjustment. Furthermore, employment protection legislation interacts with wage rigidity: the higher the wage rigidity, the larger the reduction of the volatility of unemployment is. Furthermore, the steady-state level of wages is negatively affected by employment protection legislation. This fact together with lower employment volatility can explain why Europe has experienced a period of wage moderation and low employment creation as documented by Blanchard (2004).