



Labor market institutions and inflation volatility in the euro area

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ABSTRACT

Despite having had the same currency for many years, EMU countries still have quite different inflation dynamics. In this paper we explore one possible reason: country specific labor market institutions, giving rise to different inflation volatilities. When unemployment insurance schemes differ, as they do in EMU, reservation wages react differently in each country to area-wide shocks. This implies that real marginal costs and inflation also react differently. We report evidence for EMU countries supporting the existence of a cross-country link over the cycle between labor market structures on the one side and real wages and inflation on the other. We then build a DSGE model that replicates the data evidence. The inflation volatility differentials produced by asymmetric labor markets generate welfare losses at the currency area level of approximately 0.3% of steady state consumption.

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1. Introduction

Inflation differentials are still pronounced among euro area countries despite the existence, for many years, of a common currency, a single market for products, capital and labor (though with low labor mobility) and tightly harmonized fiscal policies. Why is it so? Research to date has concentrated on differentials in inflation levels, explaining their size and persistence on the basis of convergence mechanisms such as the “Balassa Samuelson”, or asymmetric national shocks (in aggregate demand, or supply, or in the degree of exposure to area-wide external shocks), whose effect are typically exacerbated by high inflation persistence.¹ Here we look instead at inflation volatility differentials and study their link with labor market institutions—specifically, the degree of coverage of unemployment insurance.

We think that the properties of euro area inflation we document and the explanation we offer may be deeper and more long-lasting than those studied by other authors. While convergence phenomena are by nature transient, and inflation persistence in the eurozone can be expected to decline as a result of product market reforms and enhanced central bank credibility, labor market structures (unemployment insurance in particular) are deeply entrenched in national preferences² and hence should be expected to vary little over time. Linking them to inflation volatility

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¹ See ECB (2003) for a non-technical survey and Honohan and Lane (2003), Angeloni and Ehrmann (2007) and the references therein, for some interpretations of the evidence.

² See Sapir (2006).

differentials³ hence means pointing at features of inflation asymmetry in the EMU that will be very difficult to remove, even at much higher levels of economic and financial integration than today.

Labor market characteristics influence the dynamics of real wages and of the marginal cost of firms, which, in the standard new-keynesian model, are a main driver of inflation. Hence it seems natural to assess the quantitative relevance of such institutions in determining differentials in inflation behavior. We do so in two steps. We first document a negative empirical relation between volatilities of de-trended real wages and inflation and replacement rates⁴ during the EMU period. Secondly, we build a DSGE model with two countries⁵ sharing the same currency, characterized by matching frictions with Nash bargaining and wage rigidity in the labor market,⁶ monopolistic competition and adjustment cost on pricing. The two-country model accounts for the rich structure of propagation mechanisms and international spillovers existing in a monetary union. We use this laboratory economy, calibrated on the euro area, to analyze the effect of shocks under different values of the replacement rates, and find that the model also gives rise to a negative relation. Finally, we match the model results with the empirical ones, and find that the model replicates well the relations found in the data.

The intuition behind our reasoning is the following. In countries with higher replacement rate (ratio between unemployment benefit and wage), workers face a better outside option which expands (steady state) wages and compresses (steady state) profits. Assuming little or no labor mobility, in the country with high replacement rate a given change in productivity induces a higher percentage change in firms' profits. This increases firms' incentives to post vacancies and makes unemployment more volatile. At the same time, wages change less in percentage terms, because they are already relatively large in absolute terms in the steady state. In other words higher replacement rates prevent wages from fully absorbing the change in productivity.⁷ This bears out in the falling volatility of real marginal costs and inflation when replacement rates are higher.

The mechanism described so far would characterize equally well a closed economy model with matching frictions and endogenous separation, however, we show that it is reinforced in the open economy. Recall that workers' total income is evaluated in terms of CPI indices (which includes prices of foreign goods) while firms' profits and wage offers are evaluated in terms of domestic inflation: a consequence of this mismatch between firms and workers surplus is that terms of trade (defined as domestic over foreign prices) enter the wage schedule as determined by the standard Nash bargaining rule. For given replacement rate in the foreign country, a higher replacement rate in the home country has two effect. First, it reduces wage and inflation volatility because of the above-mentioned mechanism. Second, the fall in domestic inflation reduces terms of trade volatility (for given correlation between domestic and foreign inflation) which in turn induces further reductions in wage volatility.

Given that the model used is suited to conduct a welfare analysis, we do so and find that asymmetries in labor market structure across the two countries give rise to welfare losses at the union level of around 0.3% of steady state consumption.

Our paper is related to a growing body of literature studying the impact of wage rigidity and non-market return to workers on the volatility of wage and unemployment.⁸ It is also related to several recent contributions pursuing a new synthesis between the new-keynesian model and the non-walrasian theory of unemployment.⁹ Our is the first contribution that introduces a non-walrasian theory of unemployment into new open economy framework. The specific focus of this paper is on the role of labor market institutions for relative volatilities, but the analysis highlights several other interesting features of the model. Finally our paper is related to other studies on inflation differentials. Inflation differentials arise because of differences in long run inflation process or because of differences in the cyclical component of inflation. We focus on the cyclical component for various reasons. First, long run differences in the inflation process are due to differences in productivity which per se do not lead to differences in inefficiency and which are normally absorbed within a decade. Second, several empirical studies (see Rogers, 2007; Ortega, 2003) show that factors other than differences in long run productivity levels play a significant role in explaining price and inflation divergence in Europe. In particular they stress the importance of wages differences as main determinant of inflation differentials.

In Section 2 we present our empirical stylized facts; in Section 3 we present the model and its calibration, in Section 4 we show the model results and we match them with the data. Section 5 presents the welfare analysis and Section 6 concludes.

³ Different unemployment benefits lead to different steady state unemployment rates. However, steady state (gross) inflation is always one to the extent that there are no long run differences in productivity (Balassa Samuelson effect). Hence different labor market institutions lead mainly to differences in the dynamic of inflation across countries. Notice that even if long run differences in productivity arise they do not constitute a concern for the policy maker for two reasons. First, they vanish as the convergence process takes place (catch up effect). Second, differences in productivity, even when they apply, do not lead to differences in efficiency and welfare across countries.

⁴ As calculated by Nickell and Nunziata (2007).

⁵ For a recent paper addressing the role of labor market institution in a closed economy model see Merkl and Schmitz (2010).

⁶ The tradition of introducing matching frictions in DSGE closed economy model is well established. See Merz (1995), Andolfatto (1996), Cooley and Quadrini (1999), Shimer (2005), Hall (2005) among many others.

⁷ See for a similar link in closed economy models Pissarides (2000) and Hagedorn and Manovskii (2008).

⁸ See Shimer (2005), Hall (2005), Costain and Reiter (2008), Hagedorn and Manovskii (2008), and Zanetti (2007).

⁹ Several paper ranging from Walsh (2003) to Krause and Lubik (2007) study the role of matching frictions in new-keynesian models. Galí and Blanchard (2010), Faia (2008) and Thomas (2008) also study optimal monetary policies in new-keynesian models with matching frictions.

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