Journal of Macroeconomics 43 (2015) 81–92

Contents lists available at ScienceDirect

Journal of Macroeconomics

journal homepage: www.elsevier.com/locate/jmacro

Modelling internal devaluation experiences in Europe: Rational or learning agents?

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ARTICLE INFO

Article history:
Received 7 June 2013
Accepted 22 August 2014
Available online 28 September 2014

JEL classification:
E24
E27
E30
E37
J30

Keywords:
Internal devaluation
Competitiveness
Price and wage mark-ups
Relative price adjustment in a monetary union
Rational and learning expectations

ABSTRACT

In this paper we study the experiences of wage and price mark-up adjustments (internal devaluation) in Germany (in the decade up to 2009) and Spain (in the 5-year after 2009) within the framework of the ECB's New Multi-Country Model (NMCM). The NMCM works both in a rational expectation environment and in a learning environment. We show that a learning environment (where agents take time to adapt to the new situation) appears well suited to capture the gradual wage and price adjustment of Germany and Spain. By contrast a rational expectation model appears more appropriate to describe the abrupt wage adjustment which took place in the Baltic States in 2008–09. The two environments appear to reflect the institutional differences between Germany and Spain on the one-hand and the Baltic States on the other hand. Moreover, in the learning environment, GDP and employment gains are delayed with respect to a rational expectation setting, but they are more long-lasting.

1. Introduction

The purpose of this paper is to study how internal devaluation mechanisms can work within the EMU. This is done by analysing the impact of wage and price adjustment in two large euro area countries: Germany and Spain. DSGE models are commonly used to analyse this impact, which is typically obtained by shocking the price or wage mark-up (Gomes et al., 2010). These kinds of exercises are of critical importance in a monetary union given that they allow understanding how countries can adjust in the absence of exchange rate movement inside the union. However, when modelling shocks to relative prices/costs it is important that expectations of the future are appropriately considered along with implementation lags and habit formation.

The model used in this paper – the New Multi-Country Model (NMCM) (Dieppe et al., 2012b, 2013) – allows distinguishing between different environments in which a mark-up shock could take place. Three key features of the NMCM make it particularly suited to analyse the effects of price and cost mark-up changes inside the union: (1) the model links all major euro area countries via a single monetary policy; (2) it has been estimated and not calibrated; (3) it can be used under

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http://dx.doi.org/10.1016/j.jmacro.2014.08.008
0164-0704/

rational or learning expectations and therefore capture changes in agents' behaviour which can occur immediately or take time to materialise.

The paper specifically looks at three different experiences of internal devaluation processes: Germany in the 2000s, the Baltic States in 2008–2009 and Spain in 2009–2014. Each of these experiences is unique, given the different institutional setting in which it took place and given the different size of imbalances accumulated. However, there are some important commonalities between the adjustments in the euro area countries vis-à-vis what happened in the Baltic States. The euro area countries saw a relatively long adjustment process while in the Baltics this was very quick. The euro area countries are characterised by larger rigidities than the Baltic States and the euro area countries considered in this paper are of a much larger size than then Baltic States. The adjustment of the Baltic States took the form of both internal devaluation process and productivity increases (Blanchard et al., 2013). Although productivity increases have been an important component of the competitiveness adjustment process which took place in Spain, in Germany the adjustment in the 1990s was mainly associated to a wage mark-up shock.

The topic of relative price/cost adjustment is intrinsically related to the literature of adjustment within a currency union which finds its starting point back in the 1950s. Friedman (1953) argued that countries giving up flexible exchange rates would find it difficult to adjust to country-specific shocks in the absence of high price and wage flexibility. Following up on this analysis, Mundell (1961) added that members of a monetary union could still adjust to country-specific shocks without relying on price and wage flexibility if inside the union the degree of capital and labour mobility is high. Later in the 1960s fiscal policy was brought into the picture and McKinnon (1963) and Kenen (1969) showed that fiscal stabilisers could help to cushion the impact of country-specific shocks.

These early works were taken up in the 1990s in the discussion about the ex-ante optimality of EMU and the predominant view was that labour mobility was too low and prices and wages too rigid to allow for a sufficient degree of adjustment to country-specific shocks within EMU (Eichengreen, 1993; Decressin and Fatas, 1995).

The corresponding discussion in the 1990s was on the ex-post optimality of EMU. In particular, while it proved to be very difficult to oppose arguments against sceptical views on the ex-ante optimality of EMU, the focus started to be on how different mechanisms could work to enhance the optimality of the union once the single currency was a reality. Two of these mechanisms were: (1) to foster intra-area trade (Frankel and Rose, 1997) and (2) to increase political national responsibility by stepping up the pace of structural reforms in response to the irrevocable fixing of the exchange rate (Pissarides, 1997; Buti and Sapir, 1998). As to the latter mechanism, the 2009 crisis has found many countries unprepared to adjust both to the world trade shock and to the accumulated imbalances, because they were still locked into rigid structures, while the accumulated imbalances were hidden by a long period of buoyant growth.

After the creation of EMU, empirical and theoretical papers that focused on the accumulation of imbalances have been rather scarce prior to the 2009 crisis. Important contributions were those of Blanchard (2007a,b), showing that the adjustment of competitiveness, when prices and wages are rigid, is very costly in terms of the unemployment rate; and that of the European Commission (2008) showing that price and wage flexibility are key for efficient intra-euro area adjustment in the absence of internal exchange rates. Other contributions focused on the fiscal–monetary mix, showing that it was conducive to the accumulation of imbalances (Bulir and Hurnik, 2006).

More recently, with the 2008–09 crisis there has been a renewed interest in the issue of competitiveness adjustment (see for example Ruscher and Wolff, 2009; European Commission, 2010; Jaumotte and Sodsriwiboon, 2010; Dieppe et al., 2012a). Recent empirical partial-equilibrium analysis has finally shown that more flexibility can help substantially the re-equilibration of the existing imbalances (Zemanek, 2010). Since 2010, there has been a significant increase of empirical papers analysing the period of accumulation of imbalances and subsequently looking at the rebalancing process in the euro area countries, focusing on determinants of the accumulation of large current account deficits and their reversals (Kang and Shambaugh, 2013).

This paper complements the existing literature by matching the model-based behaviour of the wage and price adjustments (i.e. the price and cost components of the competitiveness adjustment) with the historical experiences. On the basis of this analysis, one can quantify the impact of the observed competitiveness adjustment on macroeconomic developments. This is done with the NMCM, which features some key characteristics of New Keynesian DSGE models making it well suited to analyse changes in the degree of firm's competition or in the degree of labour market frictions (Dieppe et al., 2012b, 2013). In fact, given the monopolistic competition framework, the model set-up is such that there is room for increasing or decreasing competition, expressed as a price or wage mark-up.

This paper only focuses on downward reductions of mark-ups. However, the issue of how the adjustment should take place is the object of significant debate in the euro area (Landmann, 2010). The motivation for our approach is that independently of the need to adjust for past competitiveness losses, reducing high mark-ups, i.e. increasing the flexibility of the labour and product market is per se a good outcome. In fact, available micro and sector-specific evidence shows that euro area countries are generally characterised by high mark-ups in prices and wages (Christopoulou and Vermeulen, 2008; Vogel, 2011). This notwithstanding, other margins (such as overtime pay or fringe benefits) for adjusting labour costs are possible in times of crisis (Babecky et al., 2009).

The remainder of the paper is structured as follows. Section 2 describes the key features of the NMCM. Section 3 shows the results of a gradual wage mark-up shock in Germany and Spain; Section 4 shows the results of an abrupt wage mark-up shock and stresses the sources of uncertainty related to the simulations. Section 5 reports the results of a price mark-up shock and Section 6 concludes.