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Business cycle convergence in EMU: A second look at the second moment

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A B S T R A C T

We analyse the dynamics of the standard deviation of demand and supply shocks as well as of the demand component of GDP across countries in the European Monetary Union (EMU). This analysis allows us to evaluate the patterns of cyclical comovement in EMU and compare them to the cyclical performance of the new members of the European Union (EU) and other OECD countries. We make use of sigma-convergence methods to identify synchronization patterns in business cycles. The Eurozone has converged to a stable lower level of dispersion across business cycles during the end of the 80s and the beginning of the 90s. The new EU members are relatively well synchronized with the EMU, and an enlargement of the EMU to 22 members would not significantly decrease its optimality as a currency area. There is evidence for some Europe-specific characteristics as compared to global comovements in business cycles.

1. Introduction

The conduct of monetary policy in a currency area such as the European Monetary Union (EMU) constitutes a difficult task. Different national governments with a certain degree of stabilization power confront the problem of having lost their monetary and exchange rate policy, whereas the central bank

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develops a common monetary policy upon the basis of the aggregates of the currency area. Thus, common monetary policy will not necessarily fit the interests of at least part of the member countries and, moreover, it can be a potential source of asymmetries when the response to a common monetary shock is different among the members of the currency area.[1]

Optimum currency area (OCA) theory, put forward by Mundell (1961), predicts that this institutional architecture must rely on strong integration in different economic aspects – OCA criteria such as mobility of labour force, economic openness, financial integration, flexibility of prices and wages, similarity of inflation rates, diversification in production and consumption, fiscal and political integration (see Tavlas, 1993; or Mongelli, 2002; or Dellas and Tavlas, 2009 for surveys). When asymmetric shocks hit the national economies which form a currency union, moving them away from equilibrium, these OCA prerequisites become the channel for adjustment towards the equilibrium. The higher the level of integration or flexibility in those criteria, the quicker and more complete the adjustment, and the more optimal the currency union. Those OCA criteria are typically summarized by means of the synchronization of business cycles of the members forming the currency area. Furthermore, the empirical literature evaluating the optimality of currency areas has focused on synchronization of shocks and/or business cycles with the aim of analyzing the optimality of EMU or the net benefit of joining the EMU for potential members. In so far as shocks are less asymmetric or cyclical developments are more synchronized, common monetary policy will fit the interests of the members of the currency union. The more synchronized the business cycles of the members of the currency area, the lower the probability of asymmetric shocks, and the less dramatic the loss of monetary and exchange rate policy for the member country (see Afonso and Furceri, 2008 for a theoretical model). Since the work of Frankel and Rose (1998), the literature has emphasized the potential for endogeneities of OCA criteria, a set of interactions that are likely to improve the optimality of a currency area upon its formation (see De Grauwe and Mongelli, 2005 for an assessment of endogeneities in OCA criteria). In particular, two kinds of endogeneities have been highlighted, between business cycle synchronization and trade integration and between business cycle synchronization and financial integration, upon the basis that the removal of borders from monetary integration implies a change in the structure of relationships among the members of the integration area. As a result, a country that *ex ante* does not satify the requirements for being an optimal member of a monetary union could accomplish those prerequisites *ex post* (Frankel and Rose, 1998).

The analysis of business cycle synchronization in EMU has focused basically on four issues. First of all, the assessment of synchronization in EMU-12, detecting a period of convergence from the 90s (Angeloni and Dedola, 1999; Massmann and Mitchell, 2003; Darvas and Szápari, 2005; Afonso and Furceri, 2008) and some evidence of increasing heterogeneity during the recession of 2000–2002 (Fidrmuc and Korhonen, 2004). Secondly, whether there is a core-periphery difference, reaching some agreement on the existence of a core group of countries that shows higher synchronization. Thirdly, concerning the enlargement of the EMU, some new EU countries of the recent enlargements of 2004 and 2007 present similar rates of comovement to those displayed by some of the periphery EMU-12 members (Artis et al., 2004; Fidrmuc and Korhonen, 2004, 2006, Darvas and Szápari, 2005; Afonso and Furceri, 2008). Finally, regarding the idiosyncrasy of the European synchronization against a world-wide business cycle, there exists some evidence for the disappearance of the European differential during the 90s, diluting the European business cycle within a global cycle (Artis, 2003; Pérez et al., 2007). Recently, Crespo-Cuaresma and Fernández-Amador (2013) have developed a comprehensive methodology based on sigma-convergence analysis that offers answer to all these issues within the same framework. Their results are in line with those of the literature summarized here.

In this contribution, we analyse the dynamics of cyclical dispersion in Europe for the period 1960–2008 using supply and demand shocks as well as the demand component of Gross Domestic Product (GDP) extracted using quarterly real GDP and Consumer Price Index (CPI) data for all members of EMU-12 with the aid of two different identification methods for structural shocks. The estimation of demand

[1] Huchet (2003) and Caporale and Soliman (2009) document different reactions to monetary shocks for countries in the Eurozone. Recently, Jarociński (2010) concludes that responses to monetary shocks between a group of EMU-12 countries before euro adoption and a group of new European Union (EU) members are qualitatively similar.