European economic integration and (a)symmetry of macroeconomic fluctuations ☆

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ABSTRACT

This paper empirically investigates output and consumption asymmetries in the Eurozone and enlarged EU over the period 1992–2007, and their consequences for monetary policy. Our results reveal that in the Eurozone output asymmetry has remained practically unaltered; however, there is some indication of greater consumption smoothing. The UK, Denmark and Sweden are no less asymmetric than the average Eurozone member state and could probably enter the EMU without significant macroeconomic costs. New EU member states are diverse but display higher output and, in particular, consumption asymmetries. This warrants some caution against too quick expansion of the EMU.

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1. Introduction

The 'new' monetary euro regime and the growing integration of European markets have dominated monetary policy discussions in Europe in recent years. Of particular interest and importance among economists and EU policy makers has been the (a)symmetry of macroeconomic fluctuations as a crucial factor in judging the desirability of economic and monetary integration.

From a static point of view, it has been argued that the cost of joining a monetary union and abandoning independent national currencies would be low if countries are characterized as an optimal currency area (OCA). That is, if they exhibit similar economic structures and, consequently, synchronized (symmetric) business cycles.[1] In that case, the absence of an independent national monetary policy does not need to be a major concern, as country-specific (idiosyncratic) shocks are relatively unimportant.

However, the process of economic and monetary integration itself can also affect the symmetry of macroeconomic fluctuations.[2] Similar economic policies (Coe and Helpman, 1995), tighter international trade links (Krugman, 1993; Frankel and Rose, 1998), and better risk sharing due to integrated financial markets and government transfers (Obstfeld and Rogoff, 1996; Sorensen and Yosha, 1998; Kalemli-Ozcan et al., 2001) all can jointly shape and change the post-integration patterns of macroeconomic fluctuations.

As it has been argued in the substantial literature developed in this field, both higher and lower output asymmetry may result from increased economic and financial integration. While more similar policies, reduced trade barriers and technology spillovers all add to increased output similarity, increased financial integration combined with lower trade barriers, through increased industrial specialization, may result in increased output dissimilarity. The degree of asymmetry in macroeconomic fluctuations across the Eurozone countries and the direction in which the asymmetry develops is an important matter for the European Central Bank (ECB). High output asymmetry across member countries may create some strain on monetary policy and ultimately on the ECB's independence.

Therefore, a first issue we address in this paper is to what extent the period following the introduction of the euro (1999–2007) already shows a trend towards either increasing or decreasing output asymmetry compared to the period before (1992–1998). Although the euro period is still short, the empirical evidence may shed some light on the direction and speed of changes in output patterns.

In addition, we expand the analysis to consider developments in consumption asymmetry across the Eurozone members. The asymmetry of consumption has important implications for the stability of the European Monetary Union (EMU). Arguably, output asymmetry may put some pressure on the ECB's common monetary policy. However, if countries care more about their consumption rather than their output, this concern may be overstated. In a union with sufficient integrated financial markets and risk sharing mechanisms, increased output asymmetry-though perhaps inconvenient for the ECB monetary policy-does not necessary lead to welfare losses and instability, if

[1] The debate about the costs and the benefits of an OCA dates back to Mundell (1961). See De Grauwe (1992) for an exposition.

[2] Frankel and Rose (1998) stress the 'endogeneity' of (optimal) currency areas.

consumption is hedged against idiosyncratic shocks (Sorensen and Yosha, 1998). Therefore, we also examine whether consumption asymmetry has decline in the Eurozone after the introduction of the euro due to better risk sharing via international diversification of financial assets through removing costs of currency hedging and greater transparency.

Second, the Eurozone can potentially become larger by including more members.[3] Consequently, we empirically examine whether there are substantial differences in asymmetry patterns when the Eurozone (EU-12) expands to EU-15 (Eurozone and three long-standing members), EU-27 (long-standing members and twelve new members) and further to EU-29 (EU-27 and two candidate countries) for the period 1992–2007. We use these results to reflect on challenges that the ECB monetary policy may face in the future.

To empirically implement our objectives, we follow Kalemli-Ozcan et al. (2001) and utilize the potential welfare gain of a country joining a monetary union and the risk sharing arrangement it offers as a measure of asymmetry of output and consumption shocks.[4] This utility gain is expressed in terms of consumption certainty equivalence. The rationale behind this is the more asymmetric the output (consumption) shocks of an individual country relative to the group are, the larger the gains it receives from and offers to other group-members.

The sample considered in our analysis includes twenty-seven EU member states and two candidate countries over the period 1992–2007. In comparison with previous related literature (Kalemli-Ozcan et al., 2001, 2005; Demyanyk and Volosovych, 2007), our paper uses a significantly increased sample of data, in terms of number of countries, while the period under investigation is stretched to include very recent observations. Further, unlike past studies, the empirical analysis of this paper is based on quarterly data.

Our findings reveal that the pattern of output asymmetry has not changed much with further and deeper economic integration in the Eurozone, although for most countries absolute output growth variability has declined. Consumption asymmetry however appears to be, on average, smaller than that of output and declining after the introduction of the euro, in 1999. Furthermore, we find no significant difference in output asymmetry and consumption risk sharing between the Eurozone and the EU-15. Contrary to what it is often alleged, the entry of, for instance, the UK in the Eurozone seems not to cause any further burden on the ECB or decrease the homogeneity, as measured by the overall degree of output or consumption asymmetry, in the Eurozone.

Findings are somewhat different, however, for the enlarged EU. In the EU-27 and EU-29 output asymmetries (potential welfare gains) appear to be considerably larger for the new than for the long-standing members, causing output asymmetry in the union, as a whole, to rise considerably. Diversity in asymmetry patterns within the new member states/candidate countries is substantial, too. While the output asymmetry of, for instance, the Czech Republic and Slovenia is close to the average of the old EU members, asymmetries for members like Romania, Bulgaria and candidate countries, Croatia and Turkey, are much larger. This finding suggests that entry into the Eurozone should be realized on an individual basis, to limit the challenges for the ECB monetary policy making. The evidence on consumption risk sharing in the EU-27 and EU-29 reveals that almost all new members/candidate countries have less consumption risk sharing than the old EU members have. As a result, any consequence of asymmetric output shocks will have to be borne, to a larger extent, by

the domestic country. Clearly, the advantages of financial integration in this respect need to be further developed.

The rest of the paper is organized as follows. Section 2 briefly summarizes the related literature. Section 3 presents the methodology and describes the data. Section 4 discusses the empirical findings. Section 5 concludes.

2. Related literature review

The creation of the EMU has revived the interest in (optimal) currency unions and spurred an extensive body of literature in which the symmetry of macroeconomic fluctuations occupies a central position.

The empirical literature on the desirability of the EMU has typically focused on comparing within-country to cross-country correlations. Early studies in this literature (De Grauwe and Vanhaverbeke, 1993; Bayoumi and Eichengreen, 1993) as well as a number of more recent ones (Fatas, 1997; Wynne and Koo, 2000; Forni and Reichlin, 2001; Clark and van Wincoop, 2001) compare either the variations of aggregate output/employment data across EU regions to variations of aggregate output/employment across EU countries, or the correlations of employment/output across EU countries to US regions since the US is a successful currency union and serves as a benchmark for the EMU.

A companion literature decomposes further the sources of within-country and cross-country fluctuations into common national-specific, region-specific, and industry-specific components. Stockman (1988) and a number of subsequent studies assess the relative importance of country-specific versus industry-specific shocks by examining the sources of fluctuations at both aggregate level (Costello, 1993; Drummen and Zimmermann, 1992; Heston and Rouwenhorst, 1994; Norrbin and Schlagenhauf, 1996) and disaggregate level (Helg et al., 1995), using a variety of statistical models and methodologies.[5] Overall, the findings of these two strands of literature suggest that shocks are more symmetric across the US regions than in Europe and that country-specific sources of variation typically dominate industry-specific factors.

A considerable amount of work has been also devoted in explaining what determines the observed business-cycle correlations. Several mechanisms have been proposed in the literature. Similar economic (and mainly monetary) policies and supply shocks via technology and knowledge spillovers have been identified as potential sources of symmetry in fluctuations (Coe and Helpman, 1995).

International trade in goods has been another mechanism that shapes the symmetry of fluctuations. Other things being equal, tighter international trade links could spur inter-industry specialization, rendering the business cycles among members less synchronized (Kenen, 1969; Krugman, 1993). However, lower trade barriers could also stimulate intra-industry specialization leading to less asymmetric fluctuations since more trade could allow demand shocks to be spread across countries. This argument finds empirical support from Frankel and Rose (1998).

Increased financial integration among members of a monetary union and trade in financial assets sets yet another mechanism at work, that of risk sharing through cross-ownership of (productive) financial assets. An active literature explores the role of market institutions (capital and credit markets) in providing international risk sharing (Obstfeld, 1994; Baxter and Crucini, 1995; Asdrubali et al., 1996; Sorensen and Yosha, 1998) and its implications on income insurance and consumption smoothing.[6] An important implication is that better risk sharing would result in greater specialization. In turn,

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[3] Recently, four more adopted (or will adopt) the Euro as their currency: Slovenia as for January 1, 2007, Malta and Cyprus as for January 1, 2008 and Slovakia as for January 1, 2009. However, throughout our analysis, the Eurozone consists of twelve countries (EU-12) as our time span stretches till 2007.Q1.

[4] This approach has been also followed by Kalemli-Ozcan et al. (2005) and Demyanyk and Volosovych (2007).

[5] For a survey, see Clark and Shin (2000).

[6] Fiscal institutions can also affect risk sharing by providing cross-border income insurance via tax-transfers and grants allocation to specific countries. See Obstfeld and Rogoff (1996) for a survey.