Abstract

Following the 2008 financial crisis, the world’s attention was drawn to the periphery of the European Union, where economic openness and pegs to the Euro combined to destabilize the region. This study measures the output volatility of a set of Central and Eastern European countries from the early 1990s to 2011 using Generalized Autoregressive Conditional Heteroskedasticity (GARCH) and GARCH-in-Mean models. Volatility “spillovers” are then tested with Vector Autoregressive and Multivariate GARCH techniques. Overall, six countries can be modeled as a GARCH process, and for three of these, volatility significantly reduces output growth. Volatility comovements are particularly strong among the Visegrad countries, while Romania seems fairly insulated from external shocks. This asymmetry of responses to other CEE countries and to foreign shocks suggests that expanding the Eurozone may lead to adjustment problems.

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I. Introduction

Following the financial crisis of 2008, the Eurozone and its neighbors to the East have fallen victim to region-wide crises that have threatened to destabilize the entire area. While the financial and currency markets in a number of Central and Eastern European (CEE) countries received a great deal of attention due to fears of devaluation and resulting “contagious” currency crises, real fluctuations also have potential to spill over within the region. Trade linkages and currency regimes help drive this process.

Latvia, for example, defended its Euro peg at tremendous cost to its domestic level of output, and its wide current account deficit turned into a surplus. Its peg was required for Euro membership that would bring deeper integration and thus insulation from global shocks, but its ongoing defense could easily have a contractionary effect on the country’s trading partners. As their exports drop, so do their GDPs—leading to increased variability that can travel from one country to another.

Is real macroeconomic volatility “contagious” in this part of the world? This study looks at macroeconomic volatility, and using monthly indices of industrial production, examines whether it does indeed spill over among CEE countries. We expect that those countries enjoying the deepest trade linkages will be most vulnerable to contagion, and that the choice of exchange-rate regime might also play a role in determining how exposed each country is to its neighbors’ output shocks. Applying time-series methodologies to a set of CEE countries from 1992 to 2011, we find that this is indeed the case. This suggests that expanding the Euro Zone may lead to problems due to asymmetric adjustment.

A. Relationship to the Literature

For all their recent importance to the world economy, transition economies and the interconnections among volatility in their real economies have received relatively little attention. This is likely because of data limitations and the relatively short length of the transition process. While some studies (such as those by Artis et al., 2008 and Hegerty, 2010) find evidence of co-movements among CEE business cycles, they do not address volatility itself. Rafiq (2011) does so, testing whether the Euro area had itself experienced a U.S.-style “Great Moderation.” CEE countries are only considered peripherally as a single unit, which is proxied by the common business cycle of Hungary and Poland. Hakura (2009) specifically omits transition economies in an examination of the causes of output drops in developing countries.

Studies of output and other macroeconomic volatility instead tend to cover large panels of countries, focusing on either the causes or the effects of increased variability rather than on spillover effects or other interlinkages. One of the best-known analyses, by Ramey and Ramey