The Effects of ECB's Monetary Policy on the Economies of Central and Eastern Europe

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Over the past two decades, Central and Eastern Europe (CEE) has deepened its ties with the European Union (EU) in spite of the global financial crisis, the European sovereign debt crisis, and the rise of Eurosceptic populist forces in the region. As small open economies, CEE countries are highly dependent on trade with and investment from the EU. Closer economic and monetary integration with the Common Market, while helpful in reducing vulnerability to external shocks, has also increased exposure to spillovers from the euro area. This issue has gained particular attention in the context of the expansionary monetary policies implemented by the European Central Bank (ECB) since 2008. In the absence of synchronized business cycles, the transmission of asymmetric monetary policy shocks within a monetary union becomes more likely, decreasing the effectiveness of stabilization efforts (Altavilla, 2004). While the alignment between business cycles in CEE and the euro area has generally increased over time, especially after EU accession and euro adoption, it has also been characterized by heterogeneity across countries (Bencik, 2011; Campos et al., 2016; Fidrmuc and Korhonen, 2006). EU member states in CEE maintaining national currencies and independent monetary policies along with candidate countries negotiating to join the EU in the near future are particularly susceptible to asymmetric shocks.

This paper examines the effects of shocks originating in the euro area on key macroeconomic variables in CEE countries. In particular, we focus on the impact of shocks to economic activity and monetary conditions on output, prices, money, and interest rates in CEE and conduct the analysis in a comparative context. CEE's response to the external shocks is investigated relative to the corresponding reaction in the euro area itself and relative to CEE's reaction to similar domestic shocks. For this purpose, we use monthly data over the period

2005M1 to 2018M3 to estimate bilateral restricted vector autoregressive (VAR) models for the euro area and each of the five EU member states from CEE that have not yet joined the monetary union. Moreover, we decompose the forecast error variance of the monetary aggregates in CEE to analyze the importance of economic and monetary shocks from the euro area relative to domestic shocks.

In the past years, global vector autoregressive models (GVARs) as pioneered by Pesaran et al. (2004) and Pesaran and Smith (2006) have emerged as standard practice for multi country time series studies, in particular if a common center (such as the EU in our case) is involved. With some simple assumptions regarding the structure of spillovers, a GVAR approach allows to fully capture the interactions between a large set of countries. Yet, this comes at a cost. Even a moderately sized GVAR is extremely large. In our case with merely six countries (five of the CEE and the Euro Area) and a macromodel on the smaller end (including industrial production, prices, interest rates and money) we would obtain 24 equations, rendering structural identification impossible. To overcome this issue, identification in GVARs is typically performed using generalized impulse responses as proposed by Pesaran and Shin (1998). Those have been criticized for their fairly restrictive hidden assumptions for example by Kim (2013). However, the robust identification of monetary policy shocks for both the Euro Area and each of the CEEs considered is crucial for our question. At the same time, the interactions between the CEEs are not our primary interest and anecdotal evidence suggests that they are far less important than the relation between the CEEs and the Euro Area that we focus on. Therefore, rather than estimating a GVAR, we estimate a set of bilateral restricted VARs, where identification can be done through a combination of zero and sign restrictions.

Our results indicate that for all four macroeconomic indicators considered (i.e. industrial production, prices, money and the interest rate), the European shocks explain the vast majority of variation in CEE countries. In particular, towards the end of the forecast horizon, the share of variation explained by Euro Area shocks is typically above 50%. Money (or liquidity) is driven almost completely by European shocks. For the most part, impulse responses are similar across countries and follow the typical intuition for the behavior of the respective shocks. Interestingly, this is true for both Euro Area and domestic shocks.