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## **EXCHANGE RATE PASS-THROUGH IN EASTERN EUROPE: A PANEL BAYESIAN VAR APPROACH**

### **Abstract:**

In this paper we employ a Panel Bayesian VAR model for a homogeneous group of Eastern European countries, namely Romania, Czech Republic, Hungary and Poland, in order to estimate the exchange rate pass-through coefficients to producer and consumer price indices (proxied by PPI and HICP respectively). The method is particularly useful at efficiently combining country-specific and cross-sectional information, mitigating at the same time the small sample problem. The priors are specified such that conjugacy is preserved, allowing to take repeated draws from conditional posterior distributions using a version of Gibbs sampler.

The five-variable baseline model (industrial production index, euro nominal exchange rate, unit value index, producer price index and harmonized index of consumer prices) is estimated using January 2004 - June 2014 data and Cholesky factorization for disentangling structural shocks. Average Central Europe countries exchange rate pass-through to producer prices is larger than to consumer prices at all horizons, particularly at short- and medium-terms (about 0.3 for PPI at any horizon versus 0 for HICP in short-run and 0.2 in medium- and long-run). This result is compatible with the production chain structure assumed when ordering the variables and also with the results usually obtained in relevant literature. Individual countries coefficients are generally below the group mean for Romania (with the exception of HICP at shorter horizons) and Poland, while Czech Republic and Hungary display somehow higher pass-throughs.

Compared to individually estimated Bayesian VAR models with Minnesota type prior, only Czech Republic display pass-through coefficients well outside the 68% confidence bands associated to the Panel model. Except for Poland, both PPI and CPI respond less to nominal exchange rate shocks than in the baseline model, particularly beyond the short-run horizons.

When explicitly allowing for monetary policy shocks by adding 3 months money market interest rates data, the average pass-through to PPI is some 5 percentage points higher in the medium-run and 10 percentage points higher in the long-run, while the effects of exchange rate shocks on HICP are only marginally enlarged beyond six months horizons. Individual countries display heterogeneous results when compared to the baseline specification, although the differences are not particularly large. In addition, the interest rates model sharpens the inference, reducing model's uncertainty.

### **Keywords:**

Panel Bayesian VARs, simulations, exchange rate pass-through, emerging economies

**JEL Classification:** C11, C15, C33

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