

Exchange rate as a shock absorber or source of shocks in Poland: Evidence from Bayesian SVAR models with common serial correlation

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Abstract

The paper examines whether the flexible exchange rate of the Polish zloty has been as a shock absorber rather than a source of shocks. The stochastic macroeconomic model of an open economy that underlies the analysis is adapted from Engel and West (2006). We solve the model and derive (sign) restrictions that enable us to identify four types of structural shocks: demand (output), cost, monetary policy and financial. The sample covers quarterly data from 1998 to 2014. A set of Bayesian structural VAR models that include the relative output gap, inflation differential, real interest rate differential and real exchange rate is built. The models allow for common serial correlation which make it possible to take into account a (potential) common short-run behaviour of analysed series. Standard VAR analytical tools are used to present the results. Forecast error variance decomposition is used to determine the importance of shocks to variability of output gap and real exchange rate. The estimated impulse response functions are used to investigate the strength of reactions of output gap and real exchange rate to real versus nominal shocks. Historical simulations allow us to uncover sources of exchange rate fluctuations in time, especially the excessive pre-crisis appreciation in 2007-2008 and the subsequent sharp depreciation of the zloty. Our results are tentative at this stage. Output gap is mainly driven by real shocks. Financial shocks are behind real exchange rate although demand and cost shocks together are equally important. Impulse responses of output gap to financial and monetary shocks are rather weak whereas real exchange rate responses to real shocks are strong. Overall, our tentative finding is that evidence is tilted in favour of a shock-absorbing property of the flexible exchange rate in Poland.

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Key words: floating exchange rate, shock absorption, open economy macroeconomics, Bayesian structural VAR; common serial correlation