# Uncovering the link between flexible exchange rate and fundamentals: The case of Central and Eastern European economies

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**Abstract**

This paper examines a link between a nominal exchange rate and macroeconomic fundamentals in Central and Eastern European (CEE) countries. The dismal finding about exchange rate fluctuations is that they are virtually unrelated to macroeconomic fundamentals . According to Lyons (2001, p. 14) this determination puzzle is one of the biggest puzzles in exchange rate economics and according to Obstfeld and Roggoff (2001) this is one of the six major puzzles in international economics. A study by Engel and West (2005) contributed to a renaissance of research on exchange rate fluctuations. They demonstrated that the popular models of the exchange rate (like monetary models and models based on interest rate rule) indeed imply that the exchange rate should nearly follow a random walk if fundamentals are non-stationary and the factor for discounting future fundamentals is close to unity. The exchange rate, however, reflects the expected present value of present and future fundamentals and as such it should be a good predictor of future fundamentals (Engel et al. 2008).

The existing studies on exchange rate determination in CEE countries are focused on the issue of cointegration between exchange rates and fundamentals and are based on monetary model (see e.g. Crespo-Cuaresma et al. 2005; Uz and Ketenci 2008, 2010; Dąbrowski et al. 2013). As such they neglect the cross-sectional dependence and endogeneity of monetary policy.

In this paper we use the model based on monetary policy rule to justify the link between the nominal exchange rate against the euro and macroeconomic fundamentals that include: interest rate, output gap, expected inflation and price levels. All these variables are relative to the levels observed in the euro area. The model itself allows for endogeneity of monetary policy, i.e. the issue that is ignored in the widely used monetary model. Our empirical strategy is based on panel error correction model that allows for cross-sectional dependence. We run a series of panel causality tests to uncover the short-run and long-run relationships. The main findings are as follows. First. the cointegration between the exchange rate and macroeconomic fundamentals is strong. Second, panel Granger causality tests reveal that exchange rates in CEE countries are indeed a Granger-cause for macrofundamentals as suggested by the present-value model of the exchange rate. Third, exchange rates tend to revert to the long-run relation implied by the model and the experience of the global financial crisis (with wide fluctuations in the exchange rates) has not changed these patterns.

**JEL classification:** C33, E44, F41, F36

**Key words:** floating exchange rate, interest rate rule, Central and Eastern European countries, cross-sectional dependence, panel cointegration, Granger causality