"Exchange rate stability of EMS and CEE countries: Comparative study"

Non-technical abstract

Paper 1
Exchange Rate Volatility Prior to Monetary Integration: Comparing Snake and Visegrad

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Abstract:

This article compares nominal exchange rate volatility for two groups of countries that both experienced a considerable relaxation of their formerly tight exchange rate regimes on their way towards monetary integration: Snake (EU), and Visegrad (transition Central Europe).

While EMU membership can be considered a goal for both groups, we hypothesize that exchange rate volatility following a relaxation of exchange rate regime may differ for the two. Our results show that they do. Further, we use and contrast two methods of evaluating volatility, distinctly different from the simple standard deviation approach used in the past. The first approach lies in fitting the parametric model with a drift and diffusion function derived from the interest rate parity condition. The second approach lies in fitting the type of GARCH process that allows for specific properties of exchange rates.

Using two different methods enables us to alleviate problems with measuring volatility encountered in earlier literature and to provide more robust results. This is important since it allows transition countries to consider an alternative measure before entering a two-year period mandatory to evaluate exchange rate stability prior to joining the EMU. Thus, realized volatility under specific exchange rate regimes can be used to compare the prospects of candidate countries for exchange rate policies during the pre-accession and consequent periods.

Our findings point to a differentiated response to relaxing exchange regime. Volatility moderately decreased for the Snake, while increased for the Visegrad. Our second contribution is in contrasting two methods of evaluating volatility that differ considerably from the simple standard deviation approach used in the past, alleviate problems with measuring volatility in earlier literature, and provide more robust results. Our findings hint at a disciplining effect of the ERM and at the fact that the Visegrad countries may experience difficulties to establish a basis for an irrevocable parity at which they would enter the EMU.

Paper 2
Nonparametrically estimated diffusion with Poisson jumps: Theory and application on exchange rate

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Abstract:

The article analyzes the volatility of the exchange rates of Central European countries (Hungary and the Czech Republic) and the European Union countries participating in the former European Monetary System (Belgium and France). It has been recognized in the finance literature that one of the most important features for derivative pricing is the specification of the diffusion function. Therefore, the separation of continuous from discontinuous volatility should increase the precision of derivative pricing because the two types of noise have different hedging requirements and possibilities.

The goal of this article is to devise a technique that can be used for samples of moderate size to alleviate the shortcomings of previous studies. Then, this new technique can be used to study emerging markets where data are not available for longer time spans, like transition countries (about 10 years).

I propose a
1. model of the exchange rate process, as well as
2. a procedure for the estimation of this process.

For this purpose I modify the procedure described in Johannes (2000) for exchange rate. Furthermore, it requires imposing certain restrictions on the model. The resulting methodology allows the nonparametric estimation of diffusion on samples of moderate size.

The usefulness of the new method is showed in a simulation study. The last part of this paper is devoted to the calibration of my model on two Central European currencies and two EMS currencies. Results reveal that the currencies of the Central European region exhibit higher volatility generated by the Poisson jump component. In addition, assumptions about the functional form of the jump intensity function are reasonable. The nonparametric estimates of conditional volatility reveal a higher sensitivity of volatility to the size of the interest rate differential.

Keywords: nonparametrics, diffusion, exchange rate, Central Europe, volatility, interest rate parity, EMS, asset pricing