



Forecasting Performance of Exponential Smooth Transition Autoregressive Exchange Rate Models

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Abstract

This paper compares the forecasting performance of the Smooth Transition Autoregressive (STAR) model with the conventional linear Autoregressive (AR) and Simple Random Walk (SRW) models. The empirical analysis was conducted using quarterly data for the yen-based currencies of six major East Asian countries. We discovered strong evidence on nonlinear mean reversion in deviation from purchasing power parity (PPP). The results suggest that both the STAR and AR models outperform or at least match the performance of the SRW model. The results also show that the STAR model outperforms the AR model, its linear competitor in a 14-quarter forecast horizon. This finding is consistent with the emerging line of research that emphasizes the importance of allowing nonlinearity in the adjustment of exchange rate.

Since the establishment of the free float regime in March 1973, exchange rate forecasting has been an important research issue in exchange rate study. However, previous findings generally cannot negate over the fact that exchange rate models forecast no better than the random walk, the so-called “model of no change” (Meese and Rogoff, 1983a,b; Diebold and Nason, 1990; Meese and Rose, 1991; Lin and Chen, 1998; Kilian and Taylor, 2001). Several authors have argued that this forecast failure is due to the fact that exchange rate models ignore nonlinearity adjustments to their equilibrium values (e.g. Micheal, Nobay and Peel, 1997; Taylor and Peel, 1997; Sarno 2000; Coakley and Fuertes, 2001). In fact, the vast majority of studies on the behaviour of exchange rate rely on the assumption of linearity. The advancement in time

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