

Nonlinear Adjustment of the Real Exchange Rate Towards its Equilibrium Value: A Panel Smooth Transition Error Correction Modelling

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Non technical summary

The assessment of equilibrium values for the real exchange rate has always been an important issue in international macroeconomics, especially in the current context of global imbalances. Between the short-run market view and the purchasing power parity attractor supposed to hold at a remote time horizon, a wide range of intermediate approaches have been developed. Among them, there is the BEER or “Behavioral Equilibrium Exchange Rate” which consists in the estimation of a long-run or cointegrating relationship between the real effective exchange rate and a set of economic fundamentals. The BEER value is then calculated by predicting the real effective exchange rate from the estimated long-run equation. Vector error correction models are subsequently perfectly accurate to assess the speed at which the real exchange rate converges towards its equilibrium value.

In this context, according to the standard macroeconomic view, any deviation from the equilibrium level is considered as temporary since there are forces ensuring quickly mean-reverting dynamics. However, in many countries, the experience of real exchange rates over the last two decades has been characterized by substantial misalignments, with time lengths much higher than suggested by the theoretical models. The fact that exchange rates can spend long periods away from their fundamental values implied a revival of interest in the study of exchange rate misalignments. Our aim is to contribute to this literature by investigating the dynamics of the adjustment process of the exchange rate towards its equilibrium value in a nonlinear panel framework. The panel framework allows us to derive consistent equilibrium values of exchange rates, while the nonlinear cointegration support allows us to investigate the slowness of the adjustment process towards the long-run equilibrium.

We estimate a panel smooth transition error correction model for currencies belonging to the G-20, a group that covers both industrial and emerging economies. Our results show that the real exchange rate dynamics in the long run is nonlinear for emerging economies, whereas industrialized countries exhibit a linear pattern. More especially, there exists an asymmetric behavior of the real exchange rate when facing an over- or an undervaluation of the domestic currency. The adjustment speed appears drastically accelerated in case of an undervaluation, which is consistent with the fact that developing economies and especially emerging Asian countries are more inclined to exhibit undervalued currencies. The converse does not hold for industrialized countries which mainly face over-valuations of their currencies. Two reasons may

explain this difference between industrialized and emerging countries. First, the weight of emerging countries in the effective misalignments is relatively weak, implying that behaviors of those two sub-groups are rather disconnected. Second, misalignments in absolute towards equilibrium is linear for industrialized countries because misalignments are more homogeneous. Another conclusion of our findings is that the convergence process towards the long-run equilibrium is independent from the magnitude of the current account or the net foreign asset imbalances, which confirms that the real exchange rate is probably not the key of global imbalances' unwinding.

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