Intervention in the Foreign Exchange Market in a Model with Noise Traders

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Summary

In traditional exchange rate models in which the exchange rate always reflects present and future expected fundamentals, there is very little scope for interventions in the foreign exchange market. In these models interventions can be effective in only two cases. One is that the monetary authorities are willing to change their domestic policies thereby changing the time path of fundamentals. The second case is that the interventions signal a future change in policies. This analysis has led to the view that sterilized interventions are an exercise in futility. The fact, however, is that most countries, and in particular Asian countries, which manage their exchange rates, use sterilized interventions and usually do not signal any future change of policies when they intervene in the market. Are these countries then acting foolishly?

We argue in this paper that one needs other than rational-expectations-representative agents models to analyse interventions in the foreign exchange market. We develop a model with heterogeneity of beliefs about the future exchange rate. In such a model the exchange rate deviates from its fundamental rate most of the time. In addition, noise is created endogenously by the interaction of chartists (noise traders) and fundamentalists without any connection with the stochastic shocks in the fundamentals. We show that in the context of such a model sterilized intervention can be quite effective in reducing the endogenous noise and in bringing the exchange rate closer to its fundamentals. This is achieved without this intervention signalling anything about the future fundamentals. The reason why this intervention can be effective is that it tends to reduce the noise generated by chartists' forecasting rules. As a result, it also reduces the profitability of chartists' forecasting rules and tends to drive out chartists from the market.

We also identify some conditions for this intervention to be effective. The first one is that it should be systematic. We find that occasional interventions do not work well, because the effect on the exchange rate of these occasional purchases and sales of foreign exchange are very unpredictable. Second, the authorities have to be transparent about the intervention rule they follow, in particular about the target exchange rate they pursue. This makes it possible for the fundamentalists to incorporate this rule in their expectations, thereby enhancing its effects. Third, pure leaning against the wind rules do not work well. The authorities need to pursue a target for the exchange rate. This has the effect of anchoring the expectations of the fundamentalists in the market, thereby increasing mean reversion in the exchange rate dynamics.

There are several issues that were not solved in this paper. A first one has to do with the sustainability of the intervention rules analysed this paper. A second problem relates to the choice of the target exchange rate. We assume that the authorities set the target exchange rate equal to the fundamental rate. Problems could arise if the authorities fail to select the right target exchange rate.