A dynamic econometric system for the Yen-Dollar rate

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Abstract

The main objectives of this paper is to attempt constructing a data-congruent, simultaneous equation system based on international linkages between real exchange rates and economic fundamentals, as well as analysing the effect of the zero interest rate policy on the model. This paper utilises Johansen's theorem and exploits the statistical properties of weak, strong and super exogeneity as analytical tools throughout this paper. The result from rigorous co-integration analysis shows that the zero lower bound interest rate made one of the co-integrating relationships, estimated before quantitative easing, powerless to explain the long-run relationship of the real Yen-Dollar rate, due to the presence of the interest rate term structure in the co-integrating relationship. Following the above analysis, this paper finds two alternative co-integrating relationships which explain Japan-US long-run economic linkage based on macroeconomic theories. The first co-integrating relationship is based on the modified UIP relationship, which is the combination of the UIP and PPP with the short-term interest rate differential and a modified current account position. The second co-integrating relationship incorporates the Fisher equation in addition to the modified UIP. Moreover, we find that the modified current account position which was introduced by Kurita (2007) still plays an important role in the co-integrating space although its effect looks becoming weaker over the time.

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