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Real Interest Rates, Real Exchange Rates,
and Net Foreign Assets in the Adjustment Process

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Abstract

This paper analyzes the recent behavior of real exchange rates, the trade balance and the net foreign asset position of the United States in an intertemporal optimizing model of the world economy that incorporates heterogeneity across countries and imperfect international capital and good markets. While the model successfully tracks the dynamics of trade balances and net foreign assets it generates too much consumption smoothing and excessively volatile relative prices. Resolving these inadequacies simultaneously is difficult as the elasticity of substitution between tradables and nontradables affects in opposite ways the degree of consumption smoothing and the volatility of relative prices.

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Summary

Consumption smoothing is a fundamental determinant of current account balances, as international trade allows consumers to smooth the effects of country-specific shocks to their incomes. In addition, international trade allows countries to change their external assets and liabilities in anticipation of future income shocks. Hence, the stock of net foreign assets is a reflection of both past and future consumption smoothing. In this paper, the time-series dynamics of net foreign assets in a dynamic, stochastic two-country consumption-smoothing model is studied. International risk sharing is constrained in the model by limits on the net indebtedness of a country, rigidities in international trade, the presence of nontraded goods, and the inability of consumers to issue any assets other than short-term bonds. The role of real exchange rates and real interest rates in the adjustment process is also studied.

Simulations are presented based upon observed output shocks for the United States and a composite rest-of-the-world aggregate during the post-Bretton Woods period. The model generates very persistent net foreign asset positions, a feature also found in the data. Similarly, the trade balance dynamics are captured well. The lack of frequent mean reversals in the simulated net foreign asset positions, even over long horizons, indicates that current output innovations dominate anticipated future endowment differences. This effect is further magnified by the positive correlation of output shocks across countries.

The simulation results for the post-Bretton Woods period obtained in the paper also indicate that, for standard preference parameters, the degree of exchange rate volatility associated with consumption-smoothing behavior is larger than the observed volatility of the multilateral U.S. dollar exchange rate. Perturbations to the framework indicate the robustness of the results, except in the case of an increase in the substitutability between tradable and nontradable goods, which naturally reduces exchange rate volatility and increases consumption smoothing.