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Journal of International Money and Finance
22 (2003) 343–363

Journal of International Money and Finance

www.elsevier.com/locate/econbase

Exchange rate dynamics and the welfare effects of monetary policy in a two-country model with home-product bias

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Abstract

International spillovers and exchange rate dynamics are examined in a two-country dynamic optimizing model that nests Obstfeld and Rogoff (1995) and allows for home-product bias in consumption patterns. Allowing for home bias changes the results in three ways. Wealth transfers associated with net foreign asset positions induce movements in the real exchange rate and produce large short-run and small long-run deviations from consumption-based purchasing power parity. Interest rates, both real and nominal, can differ across countries; home bias is a necessary but not sufficient condition for Dornbusch (1976) type exchange rate overshooting. And the welfare effects of monetary policy depend not only on world demand but also on the expenditure-switching effect of an exchange rate depreciation; expansionary monetary policy is 'beggar-thy-neighbor' if individuals have strong preferences for domestic goods.
Published by Elsevier Science Ltd.

JEL classification: F3; F4

Keywords: Beggar-thy-neighbor; Purchasing power parity; Dynamic optimizing model; Exchange rate overshooting

> "The fact ... that purchasers in each country have a greater familiarity with ... their own country's products will cause purchasers ... to have some natural preference for the purchase of home products."

J.E. Meade (1951)

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0261-5606/03/$ - see front matter Published by Elsevier Science Ltd.
doi:10.1016/S0261-5606(03)00011-1

1. Introduction

International macroeconomic models have traditionally incorporated the presumption of a home-product bias in spending. From the early attempts to add international transactions to the Keynesian model (Machlup, 1943; Meade, 1951), to the advent of models with perfect capital mobility (Mundell, 1963, 1968; Fleming, 1962), the presumption has been that foreign trade is a small portion of total economic activity. I follow in this tradition by investigating the effects of home bias on the transmission of monetary policy in a two-country dynamic optimizing model.

Some models have deviated from the presumption of home bias. In the 1970s, in models of the monetary approach to the balance of payments, traded goods produced in different countries were assumed to be perfect substitutes. More recently, individuals in the two-country, sticky-price dynamic optimizing model of Obstfeld and Rogoff (1995) have identical preferences for all goods.

The assumption of identical tastes simplifies the analysis but is somewhat restrictive. Identical goods preferences (and the law of one price) imply that both relative and absolute consumption-based purchasing power parity (PPP) hold at all times. Identical preferences also preclude exchange rate overshooting: interest rates, both real and nominal, are identical across countries, so uncovered interest parity (UIP) implies that after a monetary expansion the nominal exchange rate jumps immediately to its long-run level.

Allowing for a home-product bias makes the model consistent with two aspects of observed exchange rate behavior that macroeconomic models are poor at replicating: the extreme volatility of nominal exchange rates and the existence of long-run deviations from PPP. As home bias increases, Dornbusch (1976) type nominal exchange rate overshooting becomes more pronounced. Moreover, when there is home bias, nominal exchange rates are more volatile than fundamentals such as price levels and money supplies, an empirical regularity which real business cycle models have trouble matching (see Chari et al., 1998).

It is not surprising in a model with home bias and sticky prices that asymmetric changes in money supplies produce short-run deviations from relative PPP, but they also produce small *permanent* movements in the real exchange rate, a result that is consistent with empirical findings.[1] In the short run, a change in relative money supplies causes a current account imbalance. Current accounts must be balanced in the long run, but the short-run imbalance results in a permanent net foreign asset position; monetary policy is not neutral in the long run. The interest payments on the permanent net foreign asset position represent (small) wealth transfers. With home bias, the wealth transfer is spent disproportionately on domestically produced

[1] There is vast empirical evidence that deviations from PPP exist and that convergence to PPP is a slow process; see, for example, the review of Froot and Rogoff (1995).