



ELSEVIER

Journal of International Money and Finance
19 (2000) 185–205

Journal of
International
Money
and Finance

www.elsevier.nl/locate/econbase

Endogenous real exchange rate fluctuations in an optimizing open economy model

Shikuan Chen *

Department of International Business, National Taiwan University, Republic of Taipei, Taiwan, ROC

Abstract

This paper constructs a simple intertemporal model of a small open economy inhabited by forward looking agents, in which endogenous fluctuations in the real exchange rate can arise in equilibrium, i.e. fluctuations that are not linked to movements in economic fundamentals. The key condition for the main results is the assumption that the Marshall–Lerner condition does not hold (i.e. that the country's exports and imports are inelastic to its real exchange rate). It is shown that, given that the Marshall–Lerner condition fails, there exist periodic equilibria and/or stationary sunspot equilibria in the neighborhood of the stationary state. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Endogenous fluctuations; Periodic cycles; Hopf bifurcation; Sunspot equilibrium

1. Introduction

In international macroeconomics, perhaps the most striking features of the data are the large, persistent fluctuations in nominal and real exchange rates. The large volatility of these rates has stimulated the development of various versions of the so-called exchange rate overshooting theory pioneered by Dornbusch (1976), who developed a model in which a monetary expansion induces an immediate depreciation of domestic money in excess of its long-run equilibrium value, i.e. an overshooting of the exchange rate due to an exogenous shock. Subsequent studies (e.g. Calvo and Rodriguez, 1977; Liviatan, 1981; Frenkel and Rodriguez, 1982; Chen et al., 1989), almost without exception, also attributed large fluctuations in the real exchange rate to exogenous shocks and regarded the wide variability of the real exchange rate as purely a transitory process by which asset holders restore portfolio

* Corresponding author. Tel.: +886-2-3638399; fax: +886-2-3638399.

balance in the new steady state. In this class of models in which a unique equilibrium path tending toward the steady state is ensured, no persistent fluctuations in the real exchange rate could occur in a stationary economy which does not experience any exogenous shock to its economic fundamentals. Fluctuations in real exchange rates are therefore ascribed to fluctuations in underlying fundamental economic variables.

Meese and Rogoff (1983) first challenged the explanatory power of existing ‘exogenous’ models of exchange rate determination by showing their inferior out-of-sample forecasting performance relative to a simple random walk model. Many empirical studies since then have seemed to end with the conclusion that the real exchange rate also follows a random walk. However, a failure of structural models to outperform a random walk model does not necessarily mean that the exchange rate follows a random walk. In fact, recently a BDS test for exchange rate changes has actually rejected the random walk hypothesis and indicates that exchange rates contain substantial nonlinearity (Hsieh, 1989; Brock et al., 1991).

One plausible explanation of the nonlinear dependence is that exchange rate fluctuations are endogenous to an important degree. Over the past decade there has been a revival of interest in endogenous models of economic fluctuations, in which fluctuations could persist even in the absence of exogenous shocks to the economy.¹ Following this line of research, the present paper investigates the stability of real exchange rate dynamics in the context of an endogenous cycle model. The Brock (1975) model is modified and extended to a fully-employed small, open economy under flexible exchange rates, in which residents who optimize with perfect foresight consume both domestic goods and imported goods. Currency substitution does not exist in the economy and national money is used solely for purchases of goods and assets. The non-monetary assets in the economy are the fixed stock of domestic equities and international bonds denominated in foreign currency. These two different types of assets are assumed to be imperfect substitutes. In the analysis which follows, it is assumed that the utility function of the agent is separable in bond balances and consumption goods. It is shown that even such a simple model can produce cyclical dynamic paths for the real exchange rate. The condition for such cyclical equilibria to occur is that the Marshall–Lerner condition is not satisfied in the short run. When the Marshall–Lerner condition does not hold, a real exchange rate depreciation worsens the balance of trade, which has to be accompanied, in equilibrium, by an increase in capital inflow or a reduction in capital outflow, which, in turn, requires a fall in the expected rate of real depreciation of the domestic currency. Thus, the possibility of monotonic movements and dynamic saddle paths is excluded and cyclical fluctuations in the real exchange rate can arise. As the condition that the import and export demands are inelastic in the short run is well established empirically,²

¹ See Boldrin and Woodford (1990) for an excellent survey of endogenous fluctuations models. They point out that ‘endogenous cycle models are essentially nonlinear’ (p. 190).

² Krugman and Obstfeld (1997, p. 485) reproduce IMF elasticity estimates for trade in manufactured goods. For most industrialized countries, the ‘impact’ elasticities, which measure the response of trade flows to relative price changes in the first six months, ‘are so small that the sum of the impact export and import elasticities is less than 1’.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات