



ELSEVIER

Economic Modelling 20 (2003) 593–603

*Economic
Modelling*

www.elsevier.com/locate/econbase

Is there a relationship between real exchange rate movements and the output cycle?

Terence C. Mills*, Eric J. Pentecost

*Department of Economics, Loughborough University, Loughborough, Leicestershire, LE11 3TU,
UK*

Accepted 22 October 2001

Abstract

This paper investigates the cyclical relationships between UK and US output and the real dollar–sterling exchange rate over the floating rate period from 1973 to 1999. We find that innovations to UK and US output influence the real exchange rate with 7-quarter and 13-quarter delays, respectively, before the maximum response is felt, with innovations in the real exchange rate having a much smaller effect on UK and US output. © 2002 Elsevier Science B.V. All rights reserved.

JEL classifications: E3; F4

Keywords: Band pass filters; Business cycles; Real exchange rate

1. Introduction

The neo-classical theory of exchange rate determination, with a stock view of capital movements, has the equilibrium exchange rate dependent on purchasing power parity (PPP); that is, the bilateral nominal exchange rate is determined by the ratio of domestic to foreign price levels. Thus the real exchange rate is predicted to be constant. This prediction, however, is largely rejected by the data

* Corresponding author. Tel.: +44-1509-223-910; fax: +44-1509-222-703.

E-mail address: t.c.mills@lboro.ac.uk (T.C. Mills).

(see, e.g. Rogoff, 1996). Less restrictive models of the equilibrium exchange rate, such as the traditional Mundell–Fleming model (Mundell, 1963) or generalised portfolio balance (Branson and Buiter, 1983), assume that output is not fixed at the level of full employment, and postulate that the current account balance determines the equilibrium exchange rate. In other words, the real exchange rate, rather than assumed to be constant, is related to the relative output levels. The empirical implication of this hypothesis is that the real exchange rate should be co-integrated with the relative levels of domestic and foreign output. This hypothesis is, however, rejected by the data in this paper, just as the PPP relationship has been empirically rejected. This result notwithstanding, the real exchange rate does show a long, cyclical pattern, not dissimilar to a business cycle pattern. Cyclical output patterns could translate into real exchange rate cycles, since the international transmission of the business cycle traditionally takes place through the trade balance (see, e.g. Williamson and Milner, 1991). This cycle, however, is not apparent from either monthly or quarterly data because, as noted by Baxter (1994) in a different context, the frequency is too high. At lower frequencies, however, a cyclical relationship may emerge between output and the real exchange rate. If confirmed, this analysis also explains why PPP is rejected in the short to medium term, since it implies that the real exchange rate, rather than remain constant as suggested by PPP, in fact fluctuates over the business cycle.

This paper examines this relationship for the US and UK over the floating exchange rate period from 1973 to 1999. Section 2 posits a simple model of the relationship between US and UK output and the real dollar–sterling exchange rate. Section 3 considers the detrending of time series and models the cyclical components of the series to reveal the relationship between the real exchange rate and the two output cycles. Section 4 offers a brief conclusion.

2. The basic equilibrium model

With a stock-view of international capital flows and a freely floating nominal exchange rate regime, in equilibrium the current account of the balance of payments must be in balance. This external balance condition, expressed in terms of the home country, is:

$$Q \cdot X(Q, Y^*) = M(Q, Y) \quad (1)$$

$$X_Q < 0, X_{Y^*} > 0, M_Q > 0, M_Y > 0$$

where home exports, X , are identical to foreign imports and home imports, M , are identical to foreign exports. Q is the real exchange rate, measured as the foreign currency price of domestic currency, Y is domestic output, Y^* is foreign output, and the respective partial derivatives are given below Eq. (1). According to Eq. (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