Research in Economics 59 (2005) 67–80

RESEARCH IN ECONOMICS

www.elsevier.com/locate/yreec

Real exchange rate and employment performance in an open economy☆

João Ricardo Faria[a], Miguel A. León-Ledesma[b,*]

[a]School of Social Sciences, University of Texas at Dallas, Richardson, TX, USA
[b]Department of Economics, Keynes College, University of Kent, Canterbury CT2 7NP, UK

Received 30 April 2004; accepted 12 October 2004

Abstract

The usual neoclassical model of labor supply and employment determination has been based in closed economy models. This paper studies the effect of introducing open economy features on the determinants of equilibrium employment. It derives the long run employment level as a function of the real wage, real interest rate and real exchange rate from a standard open economy optimizing representative agent model. The paper tests the steady state solution of the model using US and UK data and, in order to avoid the Lucas' critique, it tests for the superexogeneity of the interest rate and exchange rate. The evidence shows a significant impact of the real exchange rate, real interest rate, and real wage only for the US, where it is also robust to the Lucas' critique.

Keywords: Labor supply; Interest rate; Real exchange rate; Superexogeneity

JEL classification: D90; J22; E32

☆ We would like to thank, without implicating, Joaquim Andrade, Jorge S. Arbache, Alan Carruth, Andy Dickerson, Emmanuel Kohlscheen, Kevin Nell, Adolfo Sachsida, José Sanchez-Fung and two anonymous referees for useful comments. All errors remain our own.

* Corresponding author. Tel.: +44 1227 823026; fax: +44 1227 827850.
E-mail address: m.a.leon-ledesma@kent.ac.uk (M.A. León-Ledesma).

1090-9443/$ - see front matter
doi:10.1016/j.rie.2004.12.005

1. Introduction

This paper presents a theoretical and empirical analysis of the intertemporal optimising agent model in which we introduce imported goods and capital flows and hence the effect of the real exchange rate. The employment behaviour derived from these kinds of models lies at the heart of labor market fluctuations, and cyclical fluctuations in employment are one of the leading forces behind the business cycle.[1] The hypothesis gained strength in the literature after the seminal paper of Lucas and Rapping (1969). The main idea is that workers, as rational maximizing agents, compare actual and expected future real wages and adjust their labor supply accordingly. If, due to an increase of the real interest rate, workers expect the future real wage to decrease relatively to the present real wage, they increase their labor supply and vice versa. Given the consumer producer assumption of the model, changes in the interest rate would imply changes in equilibrium employment.

The optimising agent model has been tested exhaustively. Just to quote a few references, the findings of Hall (1980), Abowd and Card (1987), Alogoskoufis (1987a,b), Dutkowsky and Foote (1992), Dutkowsky and Dunsky (1996), Mulligan et al. (1999) and Ziliak and Knieser (1999) support its hypothesis. While Card (1991) in a survey of the microeconometric literature, Altonji (1982), Altonji et al. (2002) and Mankiw et al. (1985) present evidence against the model.

However, the theoretical and empirical work done in this area has been based on closed economy models.[2] This paper is a first attempt to analyse the consequences for employment of setting the intertemporal optimising agent model in an open economy context. We do so by setting up a standard open economy model in which the derived labor supply and employment is a function not only of the real wage and the real interest rate, but also of the real exchange rate. By testing empirically the long run predictions of the model, the paper is able to assess the relevance of the introduction of the real exchange rate. Moreover, it allows us to examine the direct impact of the real exchange rate on employment. As we shall see, the open economy model provides a better specification of the equilibrium employment function. Some papers on the 'new open economy macroeconomics' tradition such as Benigno and Thoenissen (2003) have analysed the impacts of real exchange rates on labor market performance using calibration methods. Others such as Campa and Goldberg (2001), Gourinchas (1999) and Klein et al. (2003) have estimated the impact of the real exchange rate on the US and French labor markets finding significant re-location effects. In this paper, we propose a simple but appealing set up based on the intertemporal optimising agent model that extends the original contribution of Lucas and Rapping (1969) to analyse the possible effects of exchange rates on employment performance.

The paper is structured as follows. Section 2 presents the representative agent model of an open economy, where the equilibrium employment function is derived as a function of the real wage, real interest rate and real exchange rate. Section 3 presents the econometric

[1] See, for instance, Barro and King (1984).

[2] A notable recent exception to this is Hoon and Phelps (2004) who develop a 'structuralist' model of the small open economy.