International relocation, the real exchange rate and welfare

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Abstract

We develop a two-country model of international trade with endogenous firm location to investigate the impact of a rise in the corporation tax rate of one country on the spatial distribution of firms across the two countries. We show that (i) a rise in the corporation tax rate of country 1 leads to the relocation of some firms to country 2, and (ii) this relocation increases (resp. decreases) welfare in country 1 when this country is poor (resp. rich) in the sense that its agents hold a less (resp. more) than proportionate share of world equities.
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1. Introduction

Few studies address the impact of location patterns on the real exchange rate in a general equilibrium model. The purpose of this paper is to investigate the effects on welfare of a corporation tax in a world in which production is globalized so that

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firms can relocate easily, using a two-country monopolistic trade model. In particular, a novel feature of the model is that it incorporates an adjustment mechanism between international firm relocation and the real exchange rate. In the model, both the real exchange rate and income transfers from one country to another determine the effects of the profits tax. We show that (i) a rise in the corporation tax rate of country 1 leads to the relocation of some firms to country 2, and (ii) this relocation increases (resp. decreases) welfare in country 1 when that country is poor (resp. rich) in the sense that its agents hold a less (resp. more) than proportionate share of world equities.[1]

One of the questions raised in this paper is how firm location patterns affect the real exchange rate. In the economic geography literature, Martin and Rogers (1995) and Baldwin (1999) adopt a static two-country model based on Krugman (1991). They introduce a costless tradable good in addition to a constant-elasticity-of-substitution (CES) composite of manufactured goods, so that the real exchange rate (or the relative factor price between the two countries) is unity owing to factor price equalization, although this no longer holds when it is costly to trade the homogenous good. Therefore, these models ignore the effects of firm location patterns on the real exchange rate.

On the other hand, Fukao (1997) takes the adjustment of the real exchange rate into account using dynamic optimization with endogenous enterprise location.[2] However, because he begins with the assumption of a small open economy, he cannot consider the impact of enterprise relocation on another country that faces inflows of firms.[3] Recently, enterprises have very actively invested across national borders – thus, American companies and Japanese companies are increasingly making their way into each other's markets. It is, therefore, appropriate that a two-country model should be adopted to examine the impact of enterprise relocation between economic powers, such as the United States and Japan.

Ono (2001, 2004) describes a two-country two-commodity monetary continuous-time model in which the real exchange rate is endogenous. However, Ono's model does not embody any form of international location behaviour between the two

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[1] Recently, tariffs have been quite low in industrial countries, except in the case of agricultural goods, but transport costs and different kinds of non-tariff barriers still play a major role in shaping international trade flows. However, this paper focuses on role of the corporation tax rate as an economic factor that influences enterprise relocation between two countries. In Section 6, we will discuss how our results would change if trade impediments such as tariff and transport costs were included.

[2] Fukao (1997) and Martin and Ottaviano (1999) derive an equilibrium where locational arbitrage does not work completely, and they examine the impact of relocation by comparing it with free-entry equilibrium. Fukao (1997) calls this approach 'the middle-term analysis'. Similarly, in the economic geography literature based on a static model, Martin and Rogers (1995) analyse the impact of deregulation of capital movements on enterprise relocation by comparing the autarky equilibrium to the equilibrium with free movement of capital. However, since the regulation of enterprise relocations among developed countries has recently been liberalized substantially, we think that it is appropriate to examine the impact of unrestricted firm relocation. That is why our model can be referred to as 'long-term analysis'.

[3] By contrast, the economic geography literature considers the impact of firm relocation on a country that faces inflow of firms. However, this literature overlooks the impact of a real exchange rate adjustment due to relocation.