ELSEVIER

Journal of International Economics 64 (2004) 485–501

Journal of INTERNATIONAL ECONOMICS

www.elsevier.com/locate/econbase

Does lumpiness matter in an open economy? Studying international economics with regional data

Peter Debaere*

Department of Economics, University of Texas, Austin, TX 78712, USA

Received 30 August 2002; received in revised form 25 June 2003; accepted 28 July 2003

Abstract

This paper addresses the empirical question whether the regional distribution of production factors within countries is ever so uneven that it triggers specialization of production that makes regions produce different sets of goods at different factor prices. Due to the different welfare effects of trade policy in a country with regional specialization, this is an important question. In addition, it is a question about the legitimacy of treating a country as a relatively homogenous unit. In answering these questions, I implement the concept of "lumpiness" as introduced by Courant and Deardorff [J. Polit. Econ. 100 (1992) 198]. I find that lumpiness or an uneven regional distribution of production factors that induces intranational specialization and different regional factor prices is not an issue for Japan, the United Kingdom and maybe not even for India.

Keywords: Heckscher–Ohlin; Multicone production; Factor price equalization; Regional integration; Economic geography

JEL classification: F11; F15; R12

In recent years, economists have rediscovered economic geography. Due to this renewed interest, economic interactions of regions have increasingly been integrated in fields other than regional economics. The latter has been fertile for international economics. As advocated by Krugman (1991), regions in a country have become testing grounds for international trade theories. The focus on regions has challenged what is often a basic presumption of international economics: that a country is a fairly homogeneous,

* Tel.: +1-512-475-8537; fax: +1-512-471-3510.
E-mail address: debaere@eco.utexas.edu (P. Debaere).

0022-1996/$ - see front matter
doi:10.1016/j.jinteco.2003.07.005

undifferentiated unit. It has also challenged the distinction between regional and international economics.

The challenge that I investigate does not come from the "new" geography that is associated with the work of Krugman and others, but rather from the standard perfect competition analysis.[1] In a Heckscher–Ohlin model (HO), international trade is determined by countries' factor endowments: capital-abundant countries export capital-intensive products and labor-abundant countries export labor-intensive goods. Since countries are integrated economies, their regional distribution of production is by assumption irrelevant for their trade pattern. Courant and Deardorff (1992) challenge this view. They study how uneven regional distributions of endowments can be an independent cause for international trade, making regions the preferred unit of analysis in international economics and a country's international trade "a particular aggregation of interregional (...) trade". In their model, very different regional endowments induce specialization between the existing regions; regions produce different goods and their factors are paid different rewards. Moreover, a national trade policy can have different welfare effects across regions and it may impact on factor returns in ways different from the standard predictions of Stolper and Samuelson at the national level (see Melvin, 1985 for a discussion). Courant and Deardorff call a country that is characterized by such an uneven distribution of resources a lumpy country.[2]

I investigate for Japan, the United Kingdom and India whether the distribution of economic activity/resources across their regions is so uneven that it induces specialization and unequal factor prices. I take the agglomeration of resources as given and wonder what it implies for production (and hence trade). We know from empirical studies that there are wage differences within a country.[3] These wage differences are, however, not prima facie evidence of intranational specialization. In particular, since there are many explanations for regional differences, I investigate whether specialization induced by lumpiness is one of them. My findings support the notion that intranational production factors do not vary enough to induce specialization across regions and to trigger different factor prices. I argue that specialization due to lumpiness is not a regional phenomenon and specialization

[1] Krugman and Venables (1995) best summarize the alternative perspective of "new" geography in a programmatic article. They explain agglomeration of economic activity with increasing returns and transportation costs and "talk about international trade without mentioning countries." All trade flows between any two points in space matter, not just those crossing arbitrary lines, called borders. International trade is a special case of regional trade.

[2] Whether differences in *country* endowments generate specialization across countries is a central question in international economics. Leamer (1996) raised the issue in the trade and wages debate since the effect of trade (changing prices) on wages critically depends on whether countries produce the same goods or not. Schott (2003) applying Leamer (1987) and Debaere and Demiroglu (2003) implementing Deardorff (1994) provide evidence that it is impossible that all countries produce the same goods at the same factor prices. (Country endowments do not lie in one diversification cone.) This is corroborated by Evenett and Keller (2002). Note also that the idea of international specialization of production (and non-FPE) was implicitly present in Ohlin's writings from the very beginning onwards (see Flam et al., 2002) The present paper goes one step further and asks whether *regional* endowment differences induce specialization in an open economy.

[3] See Hanson (2000) for a survey of the literature on the regional variation in wages. See Machin (1996) for regional wage inequality in the United Kingdom.