

The impact of technological specialisation on national performance in a balance-of-payments-constrained growth model

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Abstract

The paper explores the effect of technological specialisation on economic growth within a balance-of-payments-constrained growth model. We find that countries that are specialised in fast-growing technologies experience above average rates of growth due to the positive effects on international competitiveness. Moreover, we find that innovation, imitation and investment affect countries' performance in international markets and their rate of growth through the balance-of-payments. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

This paper aims at exploring the impact of specialisation in fields of high technological opportunity on economic growth through the balance of payments. The rationale for countries' technological profile to affect their performance in domestic and international markets involves both supply-side and demand-side mechanisms. On the supply side, endogenous growth models have shown that the

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opportunities for innovation, for technological spillovers and for increasing returns can differ across sectors, therefore, the structure of countries activities can affect the long-run rate of growth (Lucas, 1988; Grossman and Helpman, 1991; Young, 1991; Matsuyama, 1992). Within the Schumpeterian approach, technical change is the driving force of economic growth and is unevenly distributed over time and across countries and sectors. Moreover, along different waves of development different sectors or technologies play a major role in the process of growth affecting the whole economic system through inter-sectoral links (Freeman and Perez, 1988).

On the demand side, within balance-of-payments-constrained growth models (Thirlwall, 1979), specialisation can affect growth by affecting the income elasticities of export and import. Countries with low income elasticities of import and high income elasticities of export can benefit more from an increase in international demand and can experience higher rates of growth that are consistent with the equilibrium on the current account of the balance of payment. Several studies have tested the balance-of-payments-constrained growth hypothesis. Recently McCombie (1997) has reviewed some of the empirical literature and has provided further evidence for United States, United Kingdom and Japan. He has found that over much of the postwar period the growth rates of the United States and the United Kingdom were close to their balance-of-payments equilibrium growth rates while the evidence for Japan is less clear. The most recent studies have used cointegration analysis to investigate whether there is a long-run association between the levels and growth rates of exports, imports and output. Using this methodology Hieke (1997), Atesoglu (1997) find support for the Thirlwall's model for the United States but they also find that the results are sensitive to the time period. Moreno-Brid (1999) also finds support for the model as a relevant hypothesis to explain Mexico's real exports.

The main limitation of the balance-of-payments-constrained growth model is the exogeneity of the export and import elasticities of demand. In this respect Thirlwall (1997) states that supply- and demand-side theorists can unite over the importance of the supply characteristics of goods in affecting countries' balance of payments and rates of growth. A successful attempt to introduce supply-side elements (technological competitiveness) on demand-side explanations of economic growth based on the balance of payments has been undertaken by Fagerberg (1988). The post-keynesian approach to economic growth based on the balance of payments is modified since the income elasticities of export and import depend on non-price competitiveness. The introduction of non-price competitiveness (technological competitiveness) plays an important role in modifying the original model as it becomes the driving force of economic growth. Countries with a high rate of technical change face favourable income elasticities of export and import and therefore can grow without running into balance of payments problems. It can be observed, however, that the introduction of a supply-side element as the determinant of differences across countries in international competitiveness and economic growth does not deny the possibility of the existence of a demand constraint on growth.¹

¹ This is rather the position taken by Krugman (1989). In his model, based on monopolistic competition and increasing returns, faster growth leads to an increase in the number of goods produced, resulting in an increase in market share and in apparently favourable income elasticities of export and import.

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