

Imports as competitive discipline: the role of the productivity gap

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Received 1 January 2001; accepted 1 August 2001

Abstract

This paper addresses the impact of foreign competition on the competitive advantage of domestic firms, and the role of trade policy. In an endogenous growth framework, it shows that the impact of foreign competition on R&D and productivity depends on the industry's relative position. Trade liberalization promotes innovation and enhances welfare in mature industries, but hinders growth and leads to market exit in infant industries with a large productivity gap. In the latter case, temporary protection promotes the survival of the firm, and increases welfare, at the margin. Hence, we integrate the 'old' argument for the temporary protection of infant industries with the notion that foreign competition fosters innovation and productivity.

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JEL classification: F13; F43

Keywords: Foreign competition; Infant industry; R&D

1. Introduction

Developing countries have increasingly complained that WTO rules inhibit their ability to use trade policy to build *competitive advantage*, viewed here as the relative productivity, i.e. cost efficiency, of domestic firms vis-a-vis their foreign competitors. In this debate, some old trade and growth questions regain the limelight (Bora et al., 1999): does a lagging industry react to foreign competition by expanding R&D, *fighting* to catch up to the world frontier? Or, does it *concede* to foreigners? If the latter, would

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protection sway the firm to fight? If yes, should it be used? Should it be temporary or permanent?

The literature is ambivalent. The “Washington Consensus”, following Balassa (1988), spouses the conventional wisdom that foreign competition increases productivity and technical efficiency. In contrast, development economists have historically argued that protected markets are necessary to grow competitive advantage before openness to foreign competition can occur (see Krueger, 1984 and Rodrik, 1995 for a discussion).

This paper integrates these views. To address the role of openness and trade policy on the competitive advantage of a nontraditional industry, in a developing country, the paper develops an endogenous growth model where R&D investment is the key determinant of a firm’s productivity.¹

In an endogenous growth setting, the growth of foreign firms implies that domestic firms that survive in the steady-state must consistently innovate to keep up with competitors. Implicitly, domestic firms [re]act aggressively to the competitive pressure of declining foreign prices due to foreign innovation, fighting to maintain their competitive advantage in equilibrium. Hence, the endogenous growth framework plays a key role in selecting aggressive domestic firms as survivors in the steady-state. In turn, this implies that trade liberalization expands the R&D of domestic firms in mature industries, and helps to improve their competitive advantage.

Moreover, the analysis highlights the role of the domestic firm’s initial position vis-à-vis its foreign competitors as a determinant of its willingness to fight. Domestic firms that survive and fight must start sufficiently close to their foreign competitors. In contrast, infant industries, where the initial productivity gap is too high, obtain a market share that is too low to allow the cost-spreading of R&D necessary to catch up, and eventually shut down. In this case, and contrary to the situation for mature industries, protection increases the returns to R&D.

The consequences for trade policy are two-fold. First, the optimal policy to promote innovation and welfare in the long run, i.e. in mature industries, is free trade. Second, since it encourages R&D in infant industries, temporary protection facilitates the survival of the industry. Moreover, it is welfare increasing, at the margin, because the market power of the domestic firm in home markets implies that its output and R&D investment are socially suboptimal.²

Section 2 assesses the paper’s contribution in light of the related literature. Section 3 sets up a general equilibrium model. For the sake of simplification, Sections 4–6 address the case where the domestic firm sells only in the home market: Section 4 analyzes the investment path of the domestic firm; Section 5 looks at the role of trade policy on competitive advantage; and Section 6 establishes the normative results. Then, Section 7 extends the results to the case when the domestic firm can export. Section 8 concludes. A technical Appendix A is also included.

¹ R&D stands here for all those costly learning activities that enhance productivity (for a discussion, see Evenson and Westphal, 1995).

² See Rodrik (1988) and Helpman and Krugman (1989, chap. 2), for the static efficiency gains related to the effect on output, and Beath et al. (1995), for the dynamic efficiency gains from the impact on R&D.

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