The big push, industrialization and international trade: The role of exports

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Abstract

This paper analyzes the “late” industrializations of South Korea and Taiwan, and how they can be produced by an export promotion policy. The paper adopts an open economy version of the well-known big push model. Thus, it recovers neoclassical accounts of industrialization through exports, complementing previous literature, which tends to show the existence of the big push, but is scarce on trade mechanisms to produce it. The model fits well with some stylized facts of the industrializations in East and Southeast Asia. I also apply it to a comparison of the education policies of East Asia and Latin America.

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1. Introduction

It may be startling, for anyone acquainted only with very recent economic history, to realize that four decades ago South Korea and Taiwan were very poor economies. In 1960, South Korea’s GDP per capita was lower than Mozambique’s, while Taiwan’s stood below most Latin American countries. Of course, in the next three decades the
two Asian tigers grew at 8.4% and 7.7%, respectively, in the process creating industrialized economies. Given their success, many have asked what triggered their spectacular industrializations. Certainly, part of the consensus story is the dramatic increases in their investment rates but, to quote Lucas (1993), these “are additions to the list of events to explain, not themselves explanations.” This paper attempts a new explanation for such sudden “late” industrializations accompanied with surges in investment, based on export promotion.

It is well known that the industrializations of South Korea and Taiwan coincided with new policies of export promotion. For example, starting in the 1960s, South Korea devalued its currency, introduced a number of export-promotion schemes, and gradually liberalized import controls (Nam, 1990). By 1975, its exchange rate was about 40% of the 1960 value (Edwards, 1992). Exports of manufactures grew from a negligible amount in the 1950s to an average of 22% of GDP in 1973–1975 (Kim and Roemer, 1979), accompanied by a remarkable growth in the manufacturing sector, from 9% of GDP around 1953–1955 to 27% in 1973–1975. Many economists thus posited that the industrializations of both South Korea and Taiwan were due to an “export-oriented industrialization strategy” (Krueger, 1985). Surprisingly, a clear theoretical argument for why exports (as opposed to general openness) induce investment and industrialization is lacking. Recently, the role of exports in the industrial take-offs of South Korea and Taiwan has been questioned, most notably by Rodrik (1995, 1999).

To understand a process of rapid industrialization through exports, this paper takes up an open economy version of the “big push” model (see Murphy et al., 1989, for example), with two characteristics. First, there exist complementary industries that may fail to coordinate, inducing multiplicity of equilibria and underdevelopment traps. Second, the country industrializes mostly by imitating foreign goods, not by creating new goods.1

As in other big push papers, the model has a final good that is assembled with inputs produced under increasing returns to scale. The intuition for a coordination failure and for the role of exports relies crucially on the forward and backward linkages between inputs and assembly, and can be explained with a simple example. Suppose that “computers” are made with several inputs, and suppose that the South faces a knowledge barrier, such that an investment in know-how is needed before inputs are produced there. Listed in increasing order of their know-how cost, computer inputs are: A, B, C, D, and E (A could be keyboards, B monitors, C chips, and so on). Suppose that inputs are more expensive to transport than computers, and that at an initial stage the “South” is unindustrialized: it only produces input A and does not assemble any computers. I will posit that, just as was the case in South Korea and Taiwan, the South is in a stage of import substitution, with high rates of protection for its importables. Under these circumstances, the South may suffer from a coordination failure, leading to a development trap: higher know-how inputs are

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1 One characteristic of East Asian industrialization is that it is a “late industrialization”. In Amsden’s (1989) definition, “all late industrializers have in common industrialization on the basis of learning . . . these countries industrialized by borrowing foreign technology rather than by generating new products or processes, the hallmark of earlier industrializing nations.” Addis (1999) argues that this implies large-scale industrialization. In other words, it is likely that late industrializers suffer from coordination problems among many different industries, such that when industrialization occurs, many of those industries start up at the same time.
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