

Agricultural Productivity, Infrastructures, and the Optimal Timing of Opening Trade

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Abstract

This study develops a dynamic Ricardian trade model that incorporates productive infrastructures into the manufacturing sector. The costs of building infrastructures are financed by tax. An increase in the tax rate decreases the amount of consumption in the present period but hastens the timing of opening trade. We investigate the relationship between the timing of opening trade and total welfare. We also compare two kinds of total welfare: (i) the total welfare that a country obtains by closing international trade until it has a comparative advantage in manufacturing and then engaging in free trade and (ii) the total welfare that a country obtains by specializing in agriculture according to the law of comparative advantage from the beginning. The main results are as follows: (1) there is the optimal tax rate maximizing the total welfare; (2) an increase in agricultural productivity can accelerate the timing of opening trade, which, however, does not necessarily improve total welfare; and (3) total welfare under specialization in manufacturing can be higher than that under specialization in agriculture depending on the prevailing conditions.

Keywords: productive infrastructure; industrialization; timing of opening trade; agricultural productivity

JEL Classification: F43; F10; O14

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