Production Linkage, Capital Goods Import, and Industrial Upgrading in Developing Countries

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Abstract

This paper focuses on the issue of Industrial Upgrading in developing countries from the perspective of Production Linkage. By analyzing the development history of such typical industries as automobiles, color TVs and textiles in China and other developing countries, this paper is of the opinion that Industrial Upgrading is closely related to the enhancement of Production Linkage, and that Industrial Upgrading essentially is a process wherein enterprises in some industries gradually ascend in a supply chain from low value-added positions, such as textile tailoring, assembly of spare parts and mining, to the high value-added positions, such as intermediate goods production and integrated design.

At the same time, this paper finds that developing countries often have the potential to achieve upgrading in some industries, but certain market failures will slow down the escalation speed. In this regard, the government can help enhance production linkage and unlock the upgrading potential by adopting appropriate policies to incentivize investment.

This paper holds that importing capital goods, which embody technologies and experience from developed countries, is of vital importance to improving production efficiency and to accomplishing Industrial Upgrading. However, high upfront cost of imported capital goods may pose "Hold up Risk" to enterprises, which is a significant impediment that restricts the enhancement of production linkages.

Based upon case studies, this paper builds a theoretical model founded upon the ideas of contractual incompleteness and investment hold-up, and explores how the capital goods import and the sunk fixed cost will affect the enhancement of forward and backward linkages. The high fixed cost arising from upfront investments in foreign capital goods, production technologies and employee training, as the model’s results indicate, may cause the profits of investment to be eroded by counterparties in the supply chain, which will result in insufficient investment and Pareto inefficiency. In response, the government can incentivize domestic enterprises to import capital goods and to promote Industrial Upgrading through investment subsidies, local procurement incentives and the establishment of coordination mechanism between upstream and downstream enterprises.

Based upon the above analysis, this paper, taking China's foreign exchange and trade policies in the first two decades of the Reform and Opening up (1978-1997) as an example, discusses the impact of government policies on capital goods import. By reviewing leaders' speeches, the government documents as well as the specific regulations, this paper argues that encouraging capital goods import and promoting economic upgrading were the strategic goals of many foreign exchange and trade control measures in the early stage of China's development. These exchange and trade control measures functioned as indirect subsidies for capital goods import.

Through a detailed analysis of the trade product catalog, this paper classifies total import into four categories: the Consumer Goods (including food and beverage, electromechanical consumer goods, miscellaneous consumer goods, etc.), the Machinery and Equipment, the Energy and Raw Materials, and Others. The classification methodology used in this paper provides a useful supplement to the existing literature. The calculation results, for instance, are more accurate by excluding automobiles, color TVs and telephones from the capital goods as defined in the existing methods. By virtue of descriptive statistical analysis, international comparison and econometric analysis of the China's import structure data from 1978-1997, this paper is of the view that China's foreign exchange controls in the early stage of the Reform and Opening up played an important role in encouraging the capital goods import.

Key words: Industrial Upgrading; Production Linkage; Capital Goods Import; Hold-up Problem; Import Structure

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