
Abstract

Catch-up Industrialization Theories and the Steel Industry: On “Gerschenkron vs. Hirschman”

Hajime Sato

Referring to steel production, Gerschenkron suggested that latecomers might succeed in starting industrialization through introducing the most industrially advanced technology, but Hirschman was skeptical toward the idea of investing significantly in the steel industries of underdeveloped countries. Considering the origin of the difference in their views, this paper argues that this difference derives from the two authors' different approaches to exploring the political economy beyond the technological problems involved, and that, examining the subsequent development experiences of the steel industry in Asia, their approaches supplement one another, although late industrialization should be situated and understood in the wider context of a changing global political economy, rather than in development as a catch-up paradigm.

Abstract

“Catch-Down” Innovations in Developing Countries

Tomoo Marukawa

A developing country needs to accumulate capital and develop its technology to catch up with developed countries with regard to per capita national income. However, technological progress at the national level does not necessarily imply that this catching-up is taking place in each industry and firm. In some industries and firms in a developing country, developing technology in a different direction from the front-runners in developed countries may contribute to a firm’s economic success and to the economic development of the country as a whole. In this study, this type of technological progress is called “catch-down innovation.” Ideas similar to this were proposed in discussions on “intermediate technology” and “appropriate technology” during the 1970s. In these discussions, it was argued that industrial technologies which originated in developed countries would not be appropriate for developing countries because the factor endowments, labor conditions, and the capacity to supporting industries in developing countries were different from those of developed countries. Therefore, it was argued, the technologies from developed countries should be changed to adapt to the conditions in developing countries. In recent years, some firms from China and India have developed some indigenous technologies that catered to specific, low income demands, and the social environment of consumption in these countries, and they have been commercially successful. “Catch-down innovations” include these types of technological progress as well as “intermediate and appropriate technologies.”

Abstract

The Deepening of Development in the Korean Semiconductor and LCD Industries: the Formation of the Components, Materials, and Manufacturing Equipment Sectors

Hidemi Yoshioka

Since the second half of the 1960s, South Korea has enjoyed rapid growth and succeeded in substantially catching up in the field of technology with industrially advanced countries. It is commonly accepted that Korea's industrialization showed substantially different characteristics from that of advanced countries in terms of its lack of production technology and manufacturing skills, as well as in its dependence on imported machines and core parts from abroad. However, since the end of the 1990s, Korean firms have accumulated technology and skills and succeeded in developing new product in advanced industries, such as semiconductors and liquid crystal displays (LCDs).

This paper attempts to explore, through examining the cases of the semiconductor and LCD industries, how Korea's pattern of industrial development, which was once dependent on imported parts and machines, has changed in its post-catching-up period. For this purpose, I investigate the formation of the components, materials, and manufacturing equipment sectors for semiconductors and LCDs. This paper shows that these sectors have been formed by the rise of Korean firms and Japanese investment in Korea as Korean semiconductor and LCD firms have accumulated technology and skills. This provides evidence that Korea's pattern of industrial development has changed.