

An Empirical Investigation on the Dynamics of Knowledge and IT Industries in Korea

Authors : Sang Ho Lee, Tae Heon Moon, Youn Taik Leem, Kwang Woo Nam

Abstract : Knowledge and IT inputs to other industrial production have become more important as a key factor for the competitiveness of national and regional economies, such as knowledge economies in smart cities. Knowledge and IT industries lead the industrial innovation and technical (r)evolution through low cost, high efficiency in production, and by creating a new value chain and new production path chains, which is referred as knowledge and IT dynamics. This study aims to investigate the knowledge and IT dynamics in Korea, which are analyzed through the input-output model and structural path analysis. Twenty-eight industries were reclassified into seven categories; Agriculture and Mining, IT manufacture, Non-IT manufacture, Construction, IT-service, Knowledge service, Non-knowledge service to take close look at the knowledge and IT dynamics. Knowledge and IT dynamics were analyzed through the change of input output coefficient and multiplier indices in terms of technical innovation, as well as the changes of the structural paths of the knowledge and IT to other industries in terms of new production value creation from 1985 and 2010. The structural paths of knowledge and IT explain not only that IT foster the generation, circulation and use of knowledge through IT industries and IT-based service, but also that knowledge encourages IT use through creating, sharing and managing knowledge. As a result, this paper found the empirical investigation on the knowledge and IT dynamics of the Korean economy. Knowledge and IT has played an important role regarding the inter-industrial transactional input for production, as well as new industrial creation. The birth of the input-output production path has mostly originated from the knowledge and IT industries, while the death of the input-output production path took place in the traditional industries from 1985 and 2010. The Korean economy has been in transition to a knowledge economy in the Smart City.

Keywords : knowledge and IT industries, input-output model, structural path analysis, dynamics of knowledge and it, knowledge economy, knowledge city and smart city

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