

学位論文の要旨 (論文の内容の要旨)
Summary of the Dissertation (Summary of Dissertation Contents)

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学 位 論 文

Dissertation

論 文 題 目

Dissertation Title

Structural Change in Asian Economies: Findings from Novel Sectoral Approaches Using Input-Output Tables

Structural Change is an important part of development process in all countries. Change in economic structure requires transformation in macroeconomic variables behind it. A well known tool for capturing the effects of different economic variables behind the structural change is Structural Decomposition Analysis (SDA). Similar to growth accounting, SDA could disentangle growth at disaggregated sectoral level and identify key sectors in an economy. Identifying leading industries in developing countries in the long run is essential to formulate economic policy. This research presents a simple way to identify these leading industries which are currently accelerating using a new SDA technique modifying the traditional decomposition method, which uses the input-output (I-O) tables of three different time periods of Asian Lower Income Developing Countries (LIDCs) including Bangladesh. Our modified technique could identify accelerating industries when applied to study structural change in economy, which was not possible with traditional method. In the first analytical chapter, we have showed how our modified SDA technique could outperform traditional SDA to capture prospective growth sectors in the long run. We illustrated this with a numerical example by applying both traditional and modified SDA in three different time periods I-O tables of Bangladesh. In third chapter we see how the structural change happened in some fast growing developing Asian countries over long period and how they resemble the development path of advanced Asian economies as explained by classical economic theories. Structural change in sectoral composition could be found in international trade also. Countries having comparative advantages are now exploiting the advantage of trade liberalization. Composition of intermediate goods used for export products could be an indication of structural change of a economy connected with global value chain (GVC). Domestic value added in export product-VAX-D ratios are recently used to determine the dependency of a country in international trade for intermediate inputs for its production of final goods. To capture the dependency of Asian countries in international trade for final production- we used two new indicators which could capture the inter dependency situation for domestic final demand and intermediate inputs as well. In the last analytical chapter, we analyzed the dependency of Asian countries in international trade for intermediate goods and how the structure of their production changes over last two decades.

The second chapter aims at disentangling the process of economic growth in Bangladesh to identify some prospective accelerating sectors which could achieve constant economic growth with proper policy support. With frequent climate change related disaster shocks and a huge burden of refugees from neighbor country's conflict, Bangladesh needs to formulate effective strategies to support its most prospective sectors for ensuring sustainable development. Using a modification of traditional SDA, we identify some prospective growth sectors in Bangladesh economy. We have found some labor intensive manufacturing and high value added service sectors as key sectors for growth in Bangladesh. Our analysis showed Bangladesh is mainly dependent on Textiles & Food sectors in manufacturing and Construction, Real Estate & Inland Transport sectors in Service for its quick growth. Most importantly, we found some new manufacturing sectors like Basic Metal and Machineries, NEC & Recycling sectors are constantly growing over last decade using our technique.

Proper policy support to these high potential emerging sectors could help Bangladesh achieve the Sustainable Development Goals (SDGs) of ensuring economic growth & sustainable development through promoting industrial diversification.

Third Chapter identifies some common development patterns in 6 South Asian LIDCs from a sectoral approach. According to the classical theory of economic development, as in Akamatsu's flying geese model, many countries should exhibit similar development patterns from agriculture-based sectors to processed or labor-intensive industries as a long-run trend. We have used three periods of the input-output table with a novel decomposition technique derived from a conventional method to identify key sectors that enable these countries to keep up the constant economic growth. Our results show that labor-intensive and light manufacturing sectors, along with some high-value-added service sectors, are the most promising sectors in these countries. Food, basic metal and textiles sectors are commonly growing manufacturing sectors in most countries. Service sectors such as construction, electricity and transport are also steadily surging. Among our targeted South Asian countries, only Vietnam has been developing many types of diversified sectors in manufacturing from traditional labor-intensive sectors to highly technology-oriented sectors. This means that Vietnam might achieve an advanced stage faster than other Asian countries. Most importantly, We have found some prospective accelerating sectors in these countries with our novel decomposition technique which could not be found with conventional technique, such as manufacturing & recycling, basic metal, and rubber. These findings indicate that these countries have started to diversify industries from their traditional sectors, which resembles the flying geese model.

International production process has changed much due to rise of global value chain and more and more Asian countries are taking part in it. To quantify this phenomenon, measurement of Vertical Specialization (VS) trends and how it distributed among countries and sectors is important. In fourth chapter we aim at analyzing the trends of VS shown by Asian countries over last 20 years, to indicate how their dependence on international trade varies over time. Along with using traditional indicators like VAX-D ratio to measure the domestic value added in the exported goods, we used two more new indicators to measure similar ratios for domestic final demand and intermediate imports. Our results showed that most of the Asian countries have shown downward and almost constant trends for VAX-D ratios which means they are depending more on imported intermediates over the last 20 years. Only few countries like- Hong Kong, Taiwan and Malaysia have shown upward trend in VAX-D ratios indicating their capacity development to grow the intermediate inputs domestically. Our results also find VAX-D ratio is lower in high skilled labor oriented manufacturing sectors but higher in low skill labor oriented sectors. Additionally, small island nations showed higher dependency on international trade compared to larger countries. Our detailed analysis further indicated that domestic supply chain tends to produce export products in Pakistan & Lao, domestic final demand products in China and intermediate products in Bangladesh. On the other hand, Thailand depends more on imported intermediate goods for its domestic consumption and investment products.

The Second Order Differencing or DOD decomposition in our novel decomposition technique is able to capture some features in the growth path of a sector that cannot be considered in traditional SDA which leads to identify prospective growth sectors. Policy makers in Bangladesh and other developing countries could provide financial and policy supports to these new promising accelerating sectors. Our modified SDA is better than conventional one to identify flying geese development pattern as it show that latecomer Asian developing countries have started to diversify industries from their traditional sectors resembling the flying geese model. Some common policy initiatives are attributed behind the early growth of Asian countries during the last half of the previous century. Developing Asian countries could implement similar policy initiatives to promote diversified industrialization following advanced Asian countries. To ensure constant economic growth of the Asian developing countries, participating in international production process is conducive. As empirical researches have showed countries which could export "high-technology" products could have grown more quickly, developing Asian countries only specialized in traditional export products should be specialized in exporting "high-technology" products for quick growth. Policy makers are often perplexed by structural change, as they become confused about which resources to prioritize to provide incentive. Our findings from novel input-output approaches in this research could be a new way to help formulate policies for addressing the structural change in both domestic market and international trade in Asian countries.

備考 論文の要旨はA 4判用紙を使用し、4,000字以内とする。ただし、英文の場合は1,500語以内とする。

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