

Measuring the Embeddedness of China's Manufacturing in Global Value Chain

Topic: Vertical specialization and outsourcing I

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In this paper we develop a framework to measure the embeddedness of China's manufacturing products in the global value chain(GVC). Instead of traditional definition of GVC as a chain of functions such as R&D, design, assembly, marketing, etc., we redefine the embeddedness in two dimensions as supply chain and functional chain. To measure the depth of embeddedness in the two dimensions, we first adjust the conventional I-O tables to detach the freight and insurance services from imported C.I.F. products to services industries, then based on an input-output analysis about vertical specialization, we propose a method to compute the foreign product and service contents (FPVA and FSVA) in China's manufactured export. In the model, the potential distinctions between process and normal trade are considered and the I-O tables for processing exports and domestic & normal exports are constructed separately. The different preference of FDI and domestic enterprises about offshore service outsourcing are also included to improve the formula for estimating the coefficient matrixes. Combining the trade statistics, conventional I-O tables and above information, a quadratic programming model is used to estimate the new I-O tables. We find that the FPVA is much higher than FSVA in 1997~2007, which implies that supply chain is more important than tradition function chain for China to upgrade in the GVC. There are also interesting variations across trade modes, observed years and sectors with different technological sophistication.