

Transmission of Shocks along the Global Value Chain

Topic: Input-Output Tables as a Network II

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We develop a framework of identifying impact of exogenous shocks by transmission channels and sources in the context of international input-output table. Extending the multiregional input-output models, we decompose impact from a global shock to a country into four terms: direct domestic impact, returned domestic impact, direct foreign impact, and third country impact. Two kind of shocks are of our focus. First, we analyze situation where there are changes in the global prices or production costs. Second, we investigate the changes in the global final demand. We provide a numerical example assuming a situation of abrupt increase in oil prices. Assuming ten percentage increase in global oil prices, we found that it increases price level of costs of Korean industries by about 1.77 percent when measured by World Input-Output Table in year 2010. Foreign content of the impact of oil price accounts for about 35 percent, and this share has been increasing over time which may represent the advance of the global value chain. Also, we argue that assessing the magnitude of shocks using international input-output tables can produce different results compared to the case of using single national input-output tables, since the magnitude of the shocks originating from foreign countries passed through the global value chain can also be considered as well when using the international input-output tables.