Separating and Reflecting Technical Change into Tomato Sector in Korean IO

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This study considers issue on how to incorporate technical change of a commodity sector not classified even in the most detailed classification into input-output table. Recently a new cultivation technology of tomato has been developed by government-funded R&D in Korea. In Korea, a government funded R&D of agricultural sector is subject to economic impact assessment, mainly by input-output method. Tomato is not classified as a commodity sector but is included in vegetable sector in basic commodity classification of Korean input-output table, the most detailed classification.

Focusing on this case, we suggest a practical approach on how to separate tomato sector as a commodity sector and to incorporate the new tomato cultivation technolgy into the 2010 Korean input-output table. In the approach, firstly, we separate the tomato sector from the vegetable sector using MRAS and TRAS. Secondly, we take a survey from tamato farmers to investigate the change of input structure of tomato sector induced by the new technology and estimate the new technology's technical coefficient vector using the survey results. Lastly, the composite new technical coefficient vector of tomato sector is computed by a weighted average of old technical cofficient vector and new vector, where the weight of the new one is the fraction of total output for tomato sector using the new technology. This new composite technical vector replaces the old one in 2010 input-output table. Our main contribution is to provide a practical procedure on how to modify input-output table by incorporating technical change of a commodity sector not classified.