

Estimating the Economy-wide Impacts of Energy Shocks in Taiwan under a Social Accounting Matrix Framework

Topic: Environmental input-output modeling VII

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This study aims to examine the potential effects of exogenous energy shocks on the economy of Taiwan under an economy-wide framework. The social accounting matrix (SAM) framework has been served as the basis of the analysis. SAM multiplier decomposition, structural path analysis, and price model analysis are then used to analyze the effects of oil, electricity and other energy shocks may have on the Taiwanese economy. In addition to the above, this study also uses the constrained fixed-price model to explore the differential effects of two policies: restricting energy use and improving energy efficiency.

The SAMs for 1996, 2001 and 2006 are compiled by integrating input-output tables with national accounts for the corresponding years. There are 49 industrial sectors in the matrices, which has enabled us to explore a wide variety of sectoral results. The results of the analysis indicate that exogenous energy shocks will have significant effects on the industrial outputs and prices of sectors. Moreover, to reduce energy use, improving energy efficiency as compared to limit energy use directly seems to be a better policy action, as the latter will generate much bigger negative effects to the economy.