The Robustness of Measures to Key Parameter Estimates in a CGE Model

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ABSTRACT

This paper intends to explore how robust the measures generated from a typical computable general equilibrium model is with respect to some of the key parameters specified along with the behavioral functions of the model. The CGE model built is based on the famous ORANI-G model and has been benchmarked to 2004 Taiwanese data. A comprehensive database system is also constructed, which covers time series industrial production and trade data for detailed 4-digit products, input-output tables for various years, time series macroeconomic variables data, and a set of modules for aggregating trade data and I/O table sectors. The industrial production and trade data are aggregated to map onto the sector definition of the I/O tables and the CGE model according to the Divisia Index formulation. These aggregated data are then used to estimate the CES and CET elasticities for different data periods. The estimated results form a range of possible values for elasticities and their corresponding means and standard deviations can be calculated. These values are fed into the CGE model sequentially to generate a set of results for measures such as GDP, employment, etc. By investigating the change and distribution of the measures, we could gain some idea of the robustness of the model results to the key parameters of the model. Similar procedures could also be applied to CGE models with different sectoral aggregations to shed some light on the relationship between parameter estimates and the level of aggregation of the model.

Keywords: CGE model, Input-Output table, Divisia index, Aggregation

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