

Underpinnings for Practical Application

David Hughes
Department of Applied Economics & Statistics
Clemson University
Clemson, SC 29634
803-788-5700
dhughes3@clemson.edu

Abstract

So-called synthetic Input-Output (I-O) models have been widely used for a variety of purposes (including targeting industry studies) concerning regional economies for a number of years. These models are “stepped-down” versions of the national, survey-based, I-O model produced by researchers with the Federal Governments. Regional data (i.e., commodity supply and demand totals) are used in combination with the national model to determine regional economic relationships. IMPLAN (Impact Planning), originally developed by researchers with the U.S. Forest Service, is the mostly widely used synthetic I-O model building system. Despite widespread use, little published effort has been devoted to evaluating the impact of the accuracy of model data and assumed relationships. Such an assessment is attempted here, in evaluating the advantages and weaknesses of using IMPLAN in helping to make industry targeting recommendations. Initially discussed are policy goals and resulting policy efforts. The strengths and weaknesses of I-O models in general are discussed. Major concepts in evaluating synthetic models and hybrid models (synthetic-based models adjusted with local and presumably superior, data) are presented. A model application provides a test case concerning how much targeting industry recommendations can change when an IMPLAN based model is adjusted based on new, local information. Nonparametric statistics are presented as a means for evaluating how industry ranking change that in turn influence recommendations. Rankings will be presented concerning how new data can influence determinations of what is feasible and determinations of what is desirable. Study results are then summarized and conclusions are drawn.