5 OUTPUT, INCOME, AND EMPLOYMENT INPUT-OUTPUT MULTIPLIERS*

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5.1 INTRODUCTION

When evaluating a public program, it is often important to know what effect a proposed policy will have on the output, income, or employment of the economy. The policy analyst may be interested in the answers to questions such as: How much additional income will be generated by a given policy or program? How many jobs will be created? How much additional output will be produced? Which industries in the economy will be affected most? Multiplier analysis is a tool that can help answer such questions. The

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multiplier accounts not only for the effects of the spending outlined in the specific program, but also for the subsequent rounds of spending generated by the initial expenditures.

The Keynesian multiplier is traditionally thought of when considering the notion of a multiplier. This multiplier measures the total effect on the economy resulting from an exogenous change in investment, consumption expenditures, government spending, or foreign exports. It is a very aggregate measure that gives no indication of which industries or regions in the economy are most or least affected by the exogenous change. There are many instances where this detail is desired. For example, the policy under investigation may be an attempt to stimulate a particular sector of the economy. In this case, the policy analyst will be interested in how output, income, or employment in that particular sector will be affected by the proposed policy. Using an input-output model, this type of detailed multiplier may be derived.

A considerable amount of literature now exists concerning multiplier applications of the multiregional input-output (MRIO) model, including the publications of Faucett (1975), Golladay and Haveman (1977), Kim, Park, and Kwak (1975), and Hill (1975). But these authors did not specify the structure of the multipliers used. The purpose of this paper is to provide explicit details on the calculation and interpretation of multiregional output, employment, and income multipliers in theory, substantiated with actual data for the United States.

5.2 THE BASIC MRIO MODEL

The MRIO model provides a systematic framework for describing and analyzing not only the sales and purchases of all industries in the economy, but also the shipments to and from all regions. The model is a combination of a set of input-output tables for each of 51 regions (50 states plus the District of Columbia), and a set of regional trade-flow tables for each of 79 goods and services. The current input-output and trade-flow base data are for 1963, but state final demands have been estimated for 1970 and 1980, as well as for 1963, and a 1972 update of the base-year data is planned.

The model is a comprehensive, multipurpose tool that can be used for systematic studies of many regional economic policies. Numerous groups, including people working for federal and state government agencies, private consulting firms, and academic institutions, have used the MRIO data and model for a variety of regional and interregional policy analyses. Of the