

Book Review

Input-Output Relationships in Pakistan

by

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Growing integration of economic analysis and policy making over the last several decades has created, as a by-product, an ever increasing flow of economic statistics, which still continues to grow in scope and detail. This is especially true in developed countries, where the various statistical offices produce each year an amount of new material which could easily fill a respectable bookcase. This is also true in the developing countries where the requirements for rational development planning and policy preparation are increasing rapidly and most of the statistical agencies have a difficult time in trying to keep up with these demands.

One of the most comprehensive descriptions of an economy, which is receiving increasing attention at the policy formulating level, is provided within the framework of an input-output table, and Dr. Rasul has made it his task to produce such a table for the Pakistan economy of 1954. This is a staggering task, generally done by a team of statisticians instead of by one person. The author deserves, therefore, a tribute of respect for his courage and perseverance in undertaking this work. This is even more the case when one realises that this project was undertaken at a distance of several thousand miles from Pakistan, in the Netherlands Economic Institute in Rotterdam or at the author's home in the Hague.

However, Dr. Rasul, being trained as an economist, could not be satisfied with having done a staggering amount of statistical spadework. The emphasis, therefore, falls on the application of his input-output table to some problems of development planning. The Netherlands School of Economics accepted this work as a doctoral thesis in the economic sciences.

The present review also consists of two parts: a statistical and an economic appraisal of the author's work.

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Tinbergen's semi-input-output method. In such an analysis sectors are distinguished as national or international, depending on the possibility to substitute between domestic products and imports. An increase of capacity in an international sector will, in general, raise the level of intermediate demand for goods and services produced in national as well as international sectors. However, there is no immediate need to expand capacity in international sectors as one can import products of such sectors. In the national sectors additional demands for their final products have to be met solely out of expansion of their capacity.

The input-output table makes it possible to study the indirect investment requirements in national sectors which follow from a given expansion in a specific international sector. Adding together the initial investment and the indirect investment requirements on the one hand, the initial production increase and the additional production required in national sectors on the other, one can obtain a capital-output ratio for the entire expansion programme. This exercise can be repeated for each international sector, assuming an initial production and investment project, and capital-output ratios for each expansion programme can be measured. These capital-output ratios will differ from the sectoral ones, as they take into account the indirect effects on production and investment in all national sectors of the economy, required in order to make a specific expansion of one of the international sectors possible. The capital-output ratios obtained in this way can be compared, and it will be clear that such comparisons provide a sounder basis for making a choice of investment programmes than a simple comparison of sectoral capital-output ratios.

One can, however, raise some important questions regarding the methodology and the interpretation of results which are not touched by the author. In the calculation of the capital-output ratios for each expansion programme as a whole, all input requirements originating in international sectors are assumed to be imported. This is a useful assumption at some stage of the analysis but one would still like to know how large the import bills came out to be. It would be interesting to list these together with the capital-output ratios for the complete expansion programmes. And another highly interesting question relates to the direct foreign exchange component of each investment programme. Together, the direct (capital goods) and the indirect (international sector inputs) import requirements could give some insight into the foreign exchange intensity of each expansion programme. One could also think about treating national and international sectors on an equal footing, assuming that all additional *domestic* input requirements (on the assumption of fixed technical coefficients) must be supplied by domestic industries. This would require a distribution of inputs over domestic

and foreign origin, not given in Dr. Rasul's input-output table, but not too difficult to construct. Instead of only keeping technical coefficients (imported plus domestic inputs) in total constant, one could then assume in addition that the ratio between imports and domestic supplies were also constant, or vary the ratio over time allowing for specific amounts of import substitution. Given the sectoral capital-output ratios, this could give a measure of the attractiveness for each programme starting with the same production increase in a specific sector, keeping import coefficients constant or allowing them to change in a specific way.

The analysis given and the conclusions drawn are highly interesting and no doubt of great value in making a development programme, but it is only a beginning of tackling the problem. After this promising start, one may sincerely hope that the author will carry on in this field and continue his research activities along the lines already indicated by this first book.

REFERENCE

1. Chenery, H.B. and P.G. Clark, *Inter-industry Economics*. (London: John Wiley, 1964).