

The Capital Coefficient Matrix for India 1980-1992-93*

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The input coefficient matrix, showing the input use structure (A matrix) of the Indian economy, is brought out regularly by the Central Statistical Organisation (CSO). However, the capital coefficient matrix (B matrix) showing the capital structure of the various sectors of the economy is not published regularly by any official agency. Earlier, in the decades of the sixties and seventies, some individual scholars estimated it and used it for growth models or for investment planning exercises. Of late, however, there seems to be no individual attempt too at estimating the capital coefficient matrix, which can be particularly useful in estimating the type of investment required for particular growth targets. The following paper is based on an attempt to construct the capital coefficient matrix for India. It is presented in two parts. The first part reviews the methodology of the earlier estimates of the capital matrix in India and tries to select the appropriate methodology for constructing a capital matrix useful for investment planning. The second part of the paper deals with the actual empirical estimation of the capital matrix, the data used and the adjustment made.

PART I

The Methodology of Estimating the Capital Coefficient Matrix

The Concept of a Capital Stock Matrix

An input-output transaction table shows the current production requirements of various sectors of an economy. A capital stock matrix shows the capital stock required for the production processes. The capital stock of an economy can be represented in matrix form as follows:

Using Sectors	⇒	1	2	N
Supplying Sectors	⇓			
1		S_{11}	S_{12}	S_{1n}
2		S_{21}	S_{22}	S_{2n}
N		S_{n1}	S_{n2}	S_{nn}

Here, S_{11} shows the capital stock of variety '1' held by the 1st industry. Each column of the capital stock matrix will show the capital asset structure of that sector. Each row will show the amount of output of that sector going as capital use to the various using sectors. A capital stock matrix by its nature will have zeros in many of its places because only few goods qualify as capital assets. Only rows relating to these goods will have entries against them. For e.g. suppose we consider an economy divided into thirty sectors; of

* This is based on the Ph.D. thesis of the author.

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