

TRADITIONAL AND LEONTIEF CAPITAL-OUTPUT RATIOS IN THE CALCUTTA INDUSTRIAL REGION

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THE capital output ratio or the capital coefficient has played an important part in development planning for some time now. It is variously defined as capital to gross-output ratio, capital to gross-value added and capital to net value added ratio.

Let us denote:

Cost of Capital = C

Annual Depreciation of Capital = D

Annual Gross Output = O

Annual Cost of Raw Materials = R

So,

Gross Value Added of Output = O - R

Net Value Added of Output = O - R - D

Then,

$$(1) \text{ Capital to Gross-Output Ratio} = \frac{C}{O}$$

$$(2) \text{ Capital to Gross-Value Added Ratio} = \frac{C}{O - R}$$

$$(3) \text{ Capital to Net Value Added Ratio} = \frac{C}{O - R - D}$$

However, all these definitions are of traditional capital output ratio. However, if we want to produce one dollar's worth of iron and steel, then it is not only necessary to provide for capital necessary to produce iron and steel, but also for the inputs say coal, etc., that are required to produce iron and steel. A scientific planning methodology must take into account this indirect requirement of capital by a given sector of the economy. Assuming full utilization of capacities and constant return to scale, these requirements can be estimated. Mathur¹ has done this for some sectors of the Indian economy and called it Leontief capital-output ratio. The purpose of the present article is to do the same for a regional economy of India.

The region considered is the Calcutta Industrial Region (C.I.R.) which constitutes the city of Calcutta and the adjoining 34 towns.

¹ Mathur, P.N., "Two Concepts of Capital-Output Ratios and Their Relevance for Development," *Artha-Vijnana*, Vol. 4, No. 4, 1962.