

## A NOTE ON OVERALL PRODUCTIVITY MEASURE

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A judgement about the productivity trends is necessary both for analytical and policy purposes. Productivity of different factors sometimes vary in different directions and measurement of overall productivity becomes difficult. In order to form judgement about the drift of overall productivity data on total cost per unit of output can be made use of. Conceptually total input is just another name for total cost and total productivity is just the inverse of average cost. The problem is one of defining the unit of output. Whether it should be value added or gross output. Research scholars do attempt to assess the efficiency of the manufacturing sector in India, as if the two measures yield similar results.<sup>1</sup> But will these two measures give the same direction of changes in productivity? The purpose of this note is to examine the conditions under which these two different measures give similar trends and when they differ.

The ratio of all costs other than depreciation and return to capital to total receipts, i.e. gross output and secondly the ratio of this non-capital cost to total value added are taken as the measures of overall productivity.

$$(1) C^1 = (C_m + C_f + C_{ps} + C_1) / R$$

$$(2) C^2 = (C_m + C_f + C_{ps} + C_1) / V$$

where  $C_m$  = Cost of materials,  
 $C_1$  = Cost of fuels etc.,  
 $C_{ps}$  = Cost of services purchased,  
 $C_f$  = Salary, wages and money value of employee benefits,  
 $R$  = Gross output,  
 $V$  = Value added,  
 $C^1, C^2$  = Efficiency indicators.

The assumption, that the conclusions derived from these measures would be the same, is not valid theoretically and as such there is every possibility of getting contradictory results. Let us get the proof of the limitation.

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<sup>1</sup> One such attempt has been made by Rajkrishna and Metha in an article 'Productivity trends in large scale industries', *Economic and Political Weekly*, Oct. 1968. These two measures are applied to the time serial data from CMI & ASI Publications for the period 1946 to 1963.