

Aggregation Problem in Input Output Analysis - A Survey

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1. INTRODUCTION

The problem of aggregation in the input-output analysis arises in two cases¹ : (a) the construction of the input-output table; (b) application of the model for forecasting sectoral output. We shall confine our attention to the second case. A considerable amount of theoretical and empirical work has been done with regard to this case : given the input-output table, how can we aggregate for a specific purpose ?

Aggregation can be defined as a process or operation by which *detailed* sectors are consolidated into broad sectors, thus reducing the total number of original sectors. The output, input and coefficients of the group represent, in general, the average (weighted) of those of the original detailed sectors belonging to the group. In this *aggregated* model, besides several groups, there may be some original sectors. In any case, all the sectors in the aggregated model are usually denoted as aggregate sectors. "Aggregation is a matter of degree, since the original sectors are never, in practice, as detailed as is possible in principle" (McManus, 1956, p.29).

Aggregation of the detailed sectors, no doubt, serves certain purposes.¹ However, the gains obtained from consolidation have to be weighed against the disadvantages (e.g., an increase in errors, loss of information of the original sectors) due to aggregation. Of course, how far the given amount of expected error is undesirable depends on the specific purpose for which the model is constructed.

Both theoretical and empirical research have been carried out to formulate aggregation criteria. The object of the present paper is to make a critical survey of the existing literature on the aggregation problem. The paper will be organized as follows: In Section I, the aggregation problem will be formally presented. Section II will deal with aggregation bias, the conditions of zero bias (necessary